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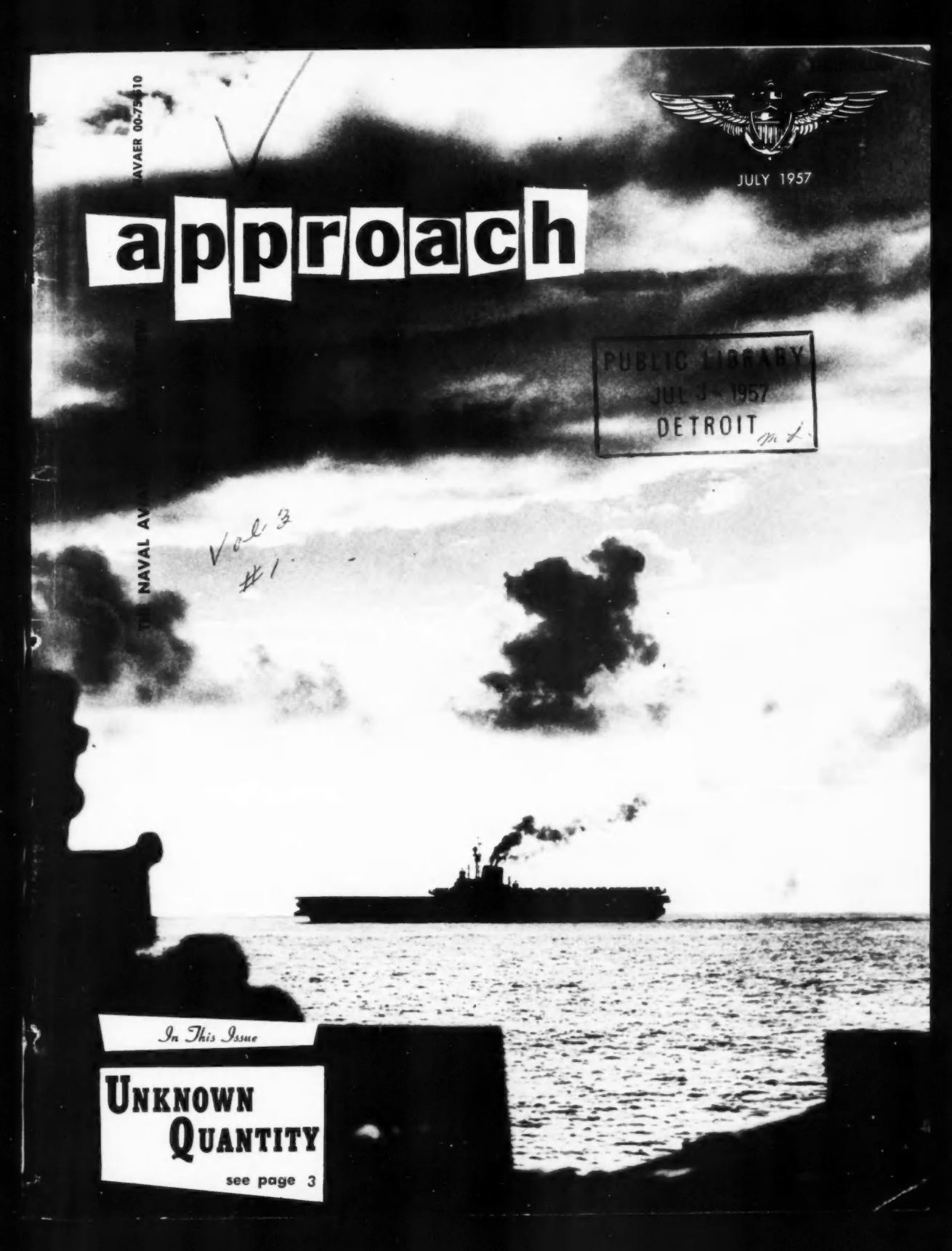

approach

JULY 1957

In This Issue

UNKNOWN QUANTITY

see page 3

Letters to the Editor

Letters may be forwarded either via official channels or direct on Anymouse forms. All letters should be signed. Names are withheld on request. Address Approach Editor, U. S. Naval Aviation Safety Center, NAS Norfolk 11, Virginia.

Sir:

While reading the "Dope Sheet" . . . the monthly paper (of) the Naval Air Station at Norfolk, I noticed a picture of retiring Secretary of the Navy, Charles S. Thomas.

I compared his picture with that of the typical Navy chief as on the cover of the March '57 issue of "Approach" . . . there is a very familiar resemblance . . . Is this him or a very good double?

JAMES F. WOHLENHAUS

For reader Wohlenhaus and others who inquired, Approach *did indeed find in the features of Secretary Thomas the elements of character with which to portray our Navy "Chief".—Ed.*

Sir:

In the article on Omni in the June 1956 issue, the method of intercepting a bearing appears to be in error. On page 13, third column, the last sentence in the first complete paragraph reads, "Doubling this and adding it to the (present) course of 005 degrees gives an interception heading of 69 degrees." That is wrong.

It should read: "Doubling this and adding it to the (desired) course of 333 degrees gives an interception heading of 037 degrees."

I am very familiar with this method of bearing interception and taught exactly the same theory in jet instrument flying for two years . . . FAETUPac is teaching omni flying in their multi-engine trainer and that's where I found the mistake. It's important to publish a correction because many Link trainer outfits and pilots are using the article, word for word, to teach Omni.

Around the San Francisco Bay area, Omni flying is extremely important because in one more year, they expect to have only Omni stations and no low freq range stations.

ERWIN J. LAWLER,
LTJG, VR2

Thanks for your correction. This course interception thing is one of the finer points of Omni flying and many pilots who use Omni may want to refer back to the June issue.—Ed.

Sir:

Why not get out *your* red pencil and edit . . . the letters? . . . In this way you can put in more letters . . . readers would welcome better grammar—editing, too . . .

CDR_____

You're so right! We'll strive to cut the length—but we won't fuss too much with the grammar as long as the meaning is clear.—Ed.

Sir:

Take one pilot—6 feet tall or over. Put him in an anvil 8 that has Single-Point ejection incorporated, add the barometric parachute opener, and then for the final back-breaker add the two additional flares now required. Close the lid and see if he can sit tall in the saddle as required for a no-broken-back ejection. Can't be done.

The new pads will help but we do not have them yet. After a chute has been 'sit' upon for about two weeks there is no real problem but until this flattening has taken place, going through the canopy will be very hard on aforementioned longfellow.

W. E. CONNIFF, JR.
Safety Officer, VF-94

Vol. 3 No. 1 July 1957

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Dear Sir:

Enclosed are the pictures of the "Desert Kit" we use in VR-32 when flying overland routes.

Robert G. Baynes, PR1, had the original idea as far as we are able to determine. The items are all obtainable through supply.

(We plan to replace two of the cans of water with the new midget-size para kit transceiver AN/URC-4 when they become available):

CONTENTS

1 PK-2 liferaft container
3 quart cans of water
1 poncho
1 pocket signaling mirror
4 signals (night/day)
1 roll type first-aid kit
1 can sunburn ointment

1 pocket compass
2 cans of liferaft rations
1 plastic water storage bag
1 bottle of water purification tablets
1 stick of hot climate type lipstick
1 jack knife
1 waterproof matchbox
1 snake bite kit

The above items pack nicely . . . we use 3 pieces of ½" felt cloth 15½" x 17" to fill in and to protect the pack.

DICK HAUCH
VR-32 ASO

Sir:

. . . thank you for the nice presentation you gave my article "Carrier Approach or Strafing Run?" in the May issue of your magazine. The illustrations by Ted Wilbur are excellent as is the layout . . . The stature of *Approach* has grown . . . You know that you have attained fame when you enter almost any readyroom head and find copies of *Approach* interspersed with *Dude, Playboy* and *Nugget* . . . I wonder if you might have two extra copies of the May issue, one for my personal files, and the other for our pilots' office here at North American . . .

JOHN M. MOORE
Engineering Test Pilot
North American Aviation

Sure thing, John. Former fellow tigers in the shop say hi, and thanks again for seeing a problem area we had not covered as yet, and voluntarily cranking out a yarn on it. Any other volunteers?—Ed.

Dear Sir:

Our squadron safety officer, LTJG W. L. Strahan, came up with a good one:

"If you know what you are going to do if it happens, the accident board won't have to guess what happened when it does!"

A thought provoker, huh?

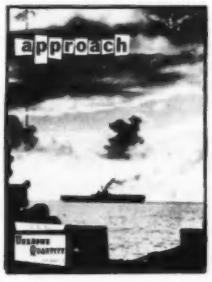
Thumbs up!

WILLIAM G. FRIEL, JR.
Service Info Officer
VF-194

Aye!—Ed.

ON THE COVER—

The USS CORAL SEA during maneuvers in the Aegean Sea.



IN THIS ISSUE

Photo page 37 courtesy *Lockheed Field Service Digest*

Letters to the Editor

continued

Sir:

I just reviewed the May 1957 edition of *Approach* and find at the end of the article "Curtain Call" that copies of your Ejection Report are available on request . . . If sufficient copies cannot be furnished for dissemination to flying personnel of this organization, request one copy of report and permission to reproduce same.

Reference is made to a previous article on ejection entitled "When You Gotta Go" which appeared in January 1957 *Approach*. This article was reproduced at this station and disseminated to all aircrew members . . . Barely six days later the pilot of a T-33 model aircraft experienced a fire while in flight and had to eject. Ejection was 100 percent successful. Upon questioning pilot on procedures used, he stated that he had just read the reproduced copy and had employed the procedures outlined. Undoubtedly this article contributed to the successfulness of this ejection. Needless to say, we are very grateful to you and your staff for the publication of this article which has been very beneficial to this organization . . .

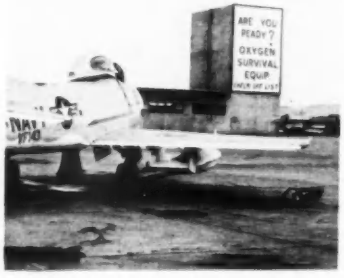
DOUGLAS W. THOMPSON
Major, USAF
Director of Safety
Moody Air Force Base
Valdosta, Georgia

OK to reproduce report. Am also enclosing NASC poster on the subject (B22-P1-956). Glad to hear about the successful use of our nose-up info.—Ed.

Sir:

In the advertising part of the safety program we, of Air Task Group Two, find that many large buildings can be used as ideal sign boards. In this case the drying locker of the parachute loft at NAS Miramar afforded a good surface. The sign faces the large squadron line area and the pilots can't help but see it as they go to their aircraft and as they taxi out . . .

The next subject is emergency exit from a crashed airplane if the canopy is jammed closed. In an all pilots' meeting this subject came up. I told the pilots that after water landings some aviators have been able to cut their way through F4U, F2H and AD canopies. To see how easily this could be done we mounted a surveyed canopy on one of our planes and tried it. The pilot was wearing full flight gear and was strapped in the seat tightly with the shoulder harness locked. On signal he drew his survival knife, carried on his life jacket, and



started hacking away. He was out of the plane in 30 seconds—and this was without the benefit of adrenalin. We found that it was best to hold the knife in front of you with both hands, the blade pointing up, and strike the top of the canopy immediately in front of your head. With the first blow a piece of the canopy one-foot square flew out. The pilot struck the canopy three more blows and had a hole large enough to go through with relative ease. The individual pilot will have to decide when he is going to open the lap belt and if he is going to remove his parachute.

BILL KOENIG
VF-143 and ATG-2 FSO

TOWER TALK

Sir:

It should become a standard procedure for all aircraft control tower operators to answer all requests for flameout approaches with . . . the airport elevation, in addition to the duty runway, its length and surface wind, etc., as: ". . . the elevation of the field is 3500 feet. Plan your approach accordingly. Out." The importance of reminding the pilot of this factor is obvious—particularly if he has practiced most of his simulated flameout approaches at a field very near sea level!

H. SPEED WILSON, Maj.
NAAS, Kingsville

Sir:

Re LCDR Gaylord E. Hill's letter (April 1957 APPROACH.)

All recommendations for improving the wheels-up situation are very commendable. However, my one objection to Mr. Hill's letter was the part, "These lights could easily be activated from the control tower."

Why does everyone want to load Control Towers down with excess gear? Most control towers have more switches, phones, inter-coms . . . now, than they can handle. We are trying to eliminate some of the excess equipment so more attention can be placed on air traffic control.

The Naval Electronics Lab in San Diego "Summary, Report of Air Station Control Tower Survey," No. 707 of 8 August 1956, has some very good points on why some of the excess equipment that has been placed in control towers should be removed.

ACC
Cecil Field

Sir:

I have been a control tower operator for a number of years and . . . now I have a suggestion to pass on . . . which I think may help clear up a lot of paperwork and discussions.

It seems that every time an accident or emergency occurs that the control tower operator's statement is usually questioned . . . this could be overcome by having the following equipment in the control tower; one motion picture camera with telephoto lens and film.

With such equipment the tower operator would take pictures of the emergency or accident while it is happening. These pictures would be a permanent record and could be used to review accidents and flight safety . . .

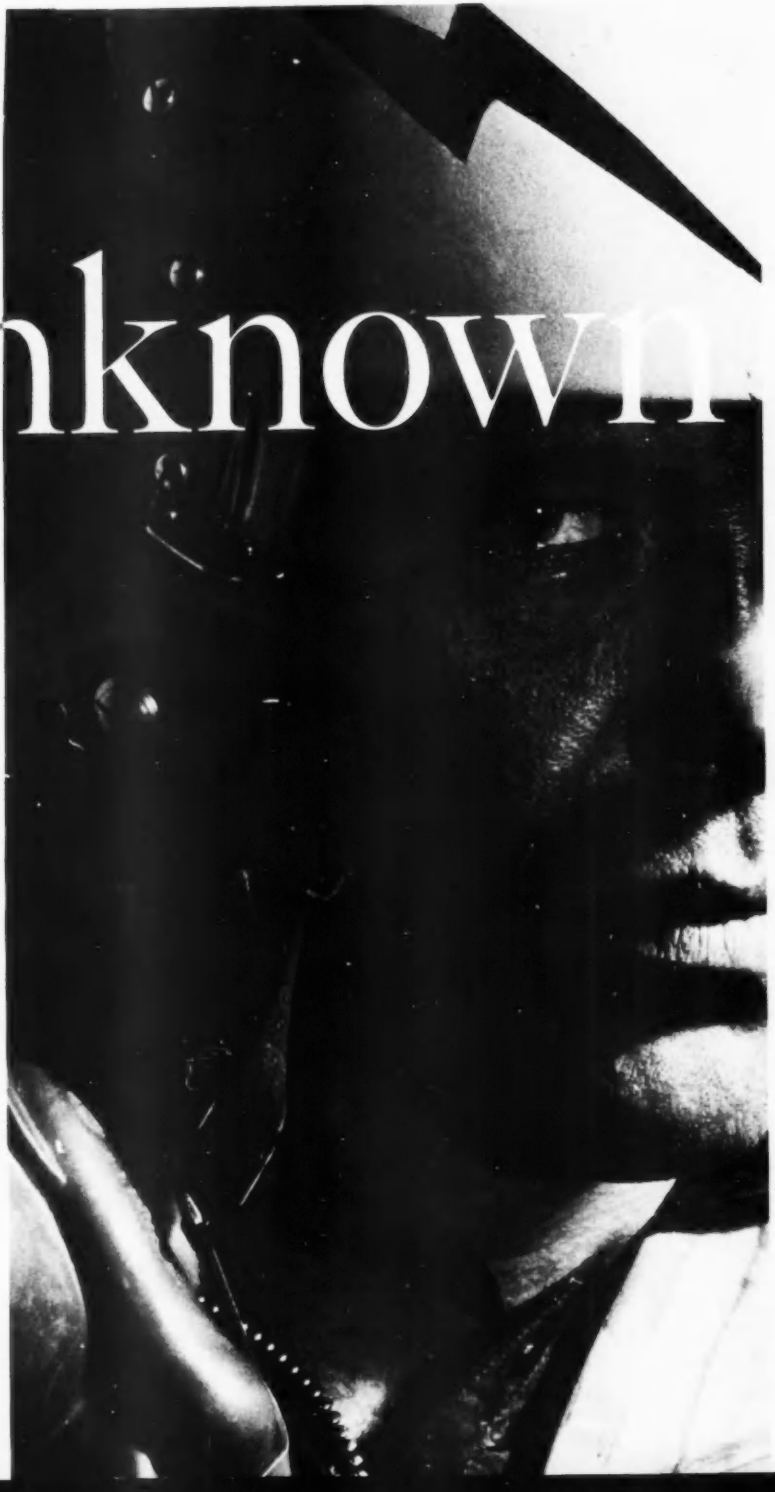
True the equipment would cost a little money but one picture is worth 10,000 words and sometimes spoken or written words are not too accurate.

C. R. GORDON
TSGT USMC

a recent APPROACH reader-survey disclosed a widely expressed desire for discussion type articles on various aspects of aviation safety—presentations which would differ somewhat from the familiar accident-investigation - conclusion - recommendation sequence.

Accordingly, APPROACH *offers on the following pages the first of a proposed series of informal discussions aimed at generating thoughtful regard for certain fields of aircraft accident prevention areas which are usually referred to merely by implication.*—THE EDITORS.

Unknown



Quantity

Not long ago, archaeologists, digging into the ruins of a 3000-year-dead civilization, patiently unearthed sufficient relics, artifacts and clay tablets to reconstruct an amazingly detailed description of a certain ruler.

Methodically relating the many bits of information, researchers produced a convincingly lifelike account of the personal life of an individual whose very name had been lost to history.

The account included numerous idiosyncrasies of temperament and religious and political beliefs—probably noted his expressed preference in wives, of which there were undoubtedly quite a few.

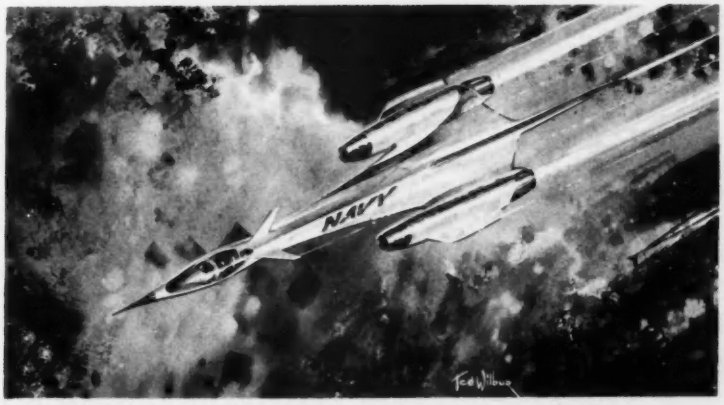
In short, from the evidence recorded by a primitive culture there was obtained not only an increased understanding of a vanished race, but a very real picture of an individual personality whose bones had long since become dust.

More recently, aircraft accident investigators, probing into the possible causes of a fatal airplane crash, found themselves effectively stymied by an almost total absence of recorded information about the pilot.

Lacking adequate data regarding this important human factor, which appeared to be particularly significant to this accident, the investigators finally sought from squadron mates and acquaintances a composite opinion-picture of the pilot's personal and professional character.

Although at first there was a somewhat understandable reluctance of squadron personnel to discuss the good and bad qualities of a fellow pilot, the appeal netted a picture which was both revealing and significant. Considerably reduced for brevity, the pilot-portrait went something like this:

. . . A below average student in flight school, with a barely passing final grade . . . General flying ability 'on the hairy side' . . . Several squadron mates 'preferred not to fly with him' . . . For a while, during a gunnery training period, he was unable to eat breakfast; became nauseated . . . Did not use the checkoff list in aircraft in which he was relatively inexperienced . . . He flew an uncomfortably close wing position . . . frequently waved out to wider position . . ."



Whatever the shape of wings to come, as long as pilots remain people there will be variations in quality—with a continuing problem of helping those who need help—*when* they need it.

UNKNOWN QUANTITY

Continued

Or, consider the case of the wingman who became disoriented during a 3-plane division letdown. In the procedure turn of the penetration, this pilot lost visual contact with other aircraft, did a snaproll, failed to recover, and ejected with minor injuries.

. . . Three months before, in a very similar situation, this pilot was flying wing on his squadron commander, who suddenly made a turn, disappeared, and was lost in a subsequent collision with the ground.

Only two months prior to his own ejection accident, the subject pilot experienced difficulty on a night flight in which he was unable "to get the range, locate the base, and was having difficulty breathing through his oxygen mask."

One month prior to the ejection flight, the same pilot was interviewed following an identical episode; this one due, the pilot maintained, to faulty equipment. Conclusion from this latter instance: Possible hyperventilation with possible hypoxia and anxiety reaction also being considered. Pilot permitted to continue in flying status. Following the final ejection accident, the pilot was ordered for examination and evaluation.

Or take this portion of interesting, if belated information which came to light *after* another pilot was lost in a fatal accident:

. . . At least one squadron mate, who had been in flight school with (the pilot) said that in jet training he (the pilot-subject) was put up front to lead, where the wingmen could keep an eye on him . . . A former instructor, when quizzed on giving him a down, said in effect: "it wouldn't do any good—he'd just get more time" . . . He was remembered as a pilot who, after a flight, couldn't put a coffee cup on the table without rattling it . . .

The records disclose many such post-accident comments.

For the thoughtful observer, however, these few cases should be sufficient to indicate that, aside from other conclusions which stem from a formal investigation, there is often ample reason to relate the human factors of judgment, temperament, emotional stability and motivation to the underlying causes of aircraft accidents.

Almost any aviator can recall graphic examples of the "characters"; the "wild-hair" pilots; the immature airplane drivers; the nervously uncertain ones who sweat silently and painfully in the reluctant realization of inadequacy; and the blithely ignorant ones who have somehow survived a multiude of hair-curling goofs.

Nor are the "characters" limited entirely to the junior pilot category. (For an impressive account of *this* aspect of the problem, see the Anymouse section, of this issue.)

At this point it should be made clear that there should be no inference of "accident proneness" in this discussion, as that term relates to an entirely different matter usually reserved for insurance company actuarial discussions.

So far as concerns aircraft accidents, it has never been established that there is such a thing as "accident proness."

The individuals with whom we are concerned, on the other hand, differ from the "average" pilot only in the degree of their flight shortcomings. These latter people may be regarded as having one thing in common: Their potential for eventually becoming involved in an accident-producing situation is considerably higher than the vulnerability considered acceptable by the "old pro" type aviator.

In naval aviation, just as in any other organization or group of individuals, there are some members whose contribution is at best limited, often completely cancelled out, by a professional inability which requires special attention. Also long-proven is the fallacy of permitting these individuals to continue, unassisted, their dubious progress in the hope that "he'll work out okay in time." Accident statistics give disapproval of this theory.

In years past, perhaps there *was* a period during which this so-called "marginal pilot" could have survived quite a few hairy episodes created by his own ineptness. It might be said that the state of the art at the time was such as to tolerate those "goofs" which make for learning the hard way. Certainly, it can be recalled that even through WW II, most emergency situations occurred in relatively slow motion, compared to today's requirement for sonic-speed reaction.

"Back then," if something went wrong, the pilot usually had a reasonable combination of time, speed and altitude which would permit him to try not just one but several emergency strategems to salvage the situation.

In many of today's aircraft, however—not so. Indeed it would not be incorrect to say that the new, high performance aircraft is realistically designed to function *with everything operating normally and being operated properly.*

When either of these two conditions is altered, the airplane of today very quickly thrusts upon the pilot a critical problem demanding immediate correct solution. Too often, there just isn't time, or altitude for a second guess if the first reaction was wrong. The pilot is compelled to think further ahead than ever before. Continued next page

UNKNOWN QUANTITY Continued

Before you can correct a deficiency, you must detect the trouble, but where aviators are concerned, this becomes especially difficult.

This is borne out, grimly, by the significant divergence between the major aircraft accident rate which has been reduced 63% to 2.9 per 10,000 hours, as compared to the ratio of fatal accidents which has increased 100% from 1 fatal accident every 11 major accidents to 1 fatal accident for every 5.5 major accidents. (During past 10 years.)

The professional pilot will quickly affirm that, to cope with this increasing problem, he must apply all his skill and attention to assure himself the scales will be weighted in his favor. For the less experienced pilot the problem is proportionately greater.

How, then, to provide assistance for the weaker (at least for the present) members of the group? Not only is *his* efficiency and safety involved, but undeniably the safety and efficiency of the entire group will be affected.

First, there is the reminder that before you can correct a deficiency, whether human or mechanical, you must *detect* the trouble, and with respect to aviation, therein lies a singular difficulty.

Although naval aviation is one of the most exacting professions known, and quite logically requires the most painstaking effort to provide the best in quality control of its personnel, the actual information available to the squadron commanding officer as to the quality of pilots is woefully inadequate.

Consider, for example, the exhaustingly detailed history of an aircraft engine or airframe, which leaves but little to be desired in the way of performance chronology — yet the parallel qualities of the pilot are rarely available.

With few exceptions, a pilot reporting to his first squadron is an almost unknown quantity.

Hence he is accepted largely on face value, on the assump-

tion that, afforded the average amount of training and experience he will become an efficient fleet pilot. His log book will be available for appraisal, and a chat with various department heads will establish to some degree his past exposure to various aircraft and phases of operations.

Occasionally, there may be forwarded a flight proficiency jacket from his training phase, although it is entirely possible that such a report will *not* be available.

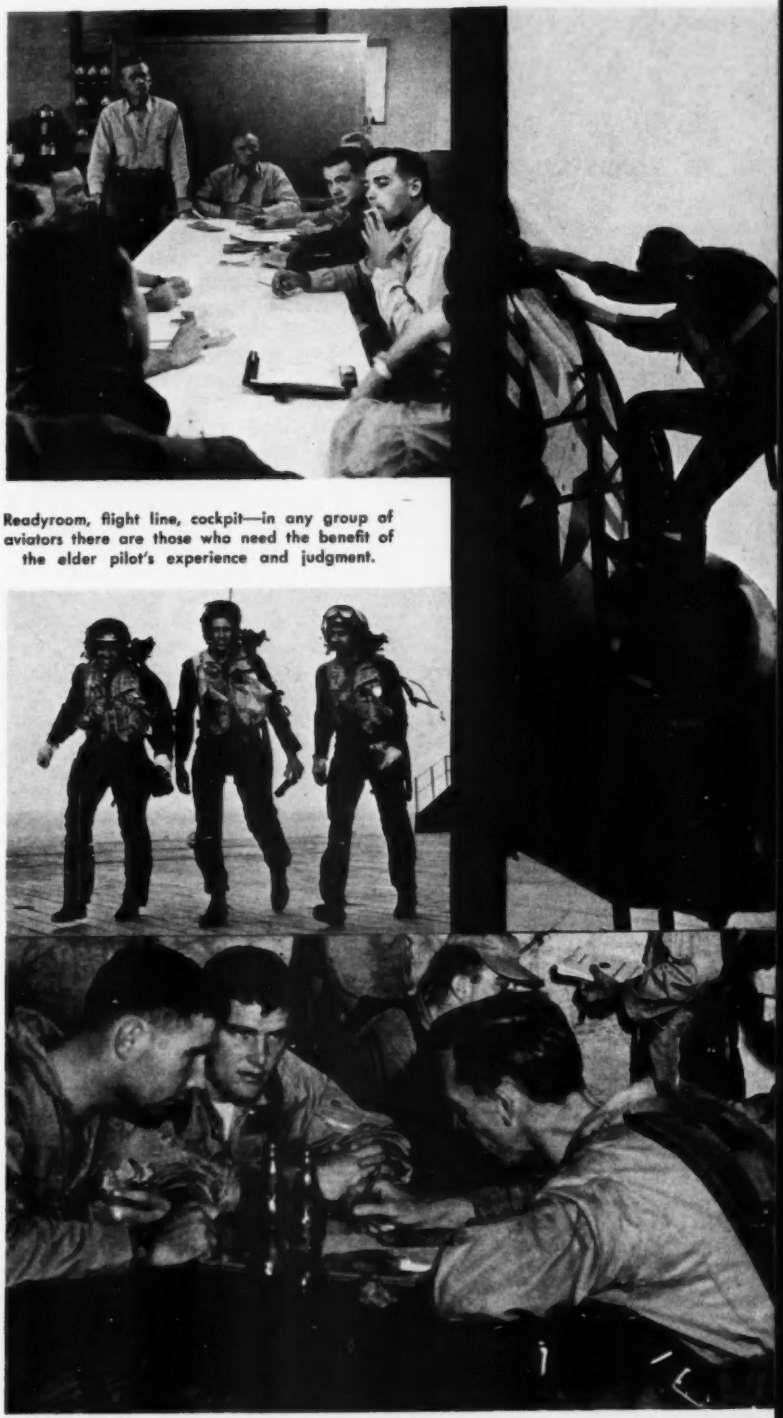
It follows too, that when this information exists, its use is not limited to detecting below-average pilots, but it will also provide a means of indicating good aviator material.

Observe too, that this situation is not restricted entirely to the newly designated aviator. The unknown quantity may also appear in the newly reported *senior* pilot whose true evaluation may be even more difficult to obtain.

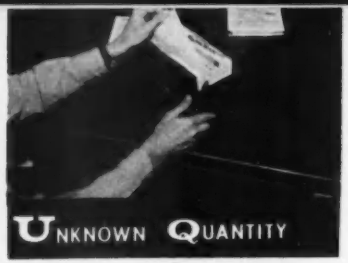
Sure, we have instrument cards and ejection and pressure chamber cards, and there are memorandum sheets in some logbooks which briefly note more recent accidents, and the squadron's training status board may contain some additional breakdown of immediate flight progress.

But a psychologist would probably wag his head dolefully over the almost complete absence of the many report-facets which serve to picture the individual's capabilities. In fact, it's safe to say that the skill and ability and motivation of a professional baseball player are more carefully observed and documented than are those of a pilot.

The Medical Officer's report on a student pilot, who was fatally injured in a night field landing crash, described the pilot as having *"indicated some anxiety towards his flying . . . wasn't able to sleep at night and was awaking*



Readyroom, flight line, cockpit—in any group of aviators there are those who need the benefit of the elder pilot's experience and judgment.



UNKNOWN QUANTITY

Continued

at 0400 each morning worrying about the coming day's flying . . . the Inventory Board found his uneaten daily lunches for the past week in his locker . . . he had mentioned several times to friends about dropping from the program . . . he had been seeing images of his children's faces on the (airplane) wings. Medical Officer's conclusions: ". . . seemed to be suffering from a . . . depression . . . in a person who is depressed, preoccupation is prominent and would decrease performance and efficiency . . . All Flight Surgeons should be on the lookout for the appearance of such symptoms . . . all aviators should be encouraged to bring their problems to the Flight Surgeon's attention . . ."

In a multi-pilot aircraft squadron the evaluation problem may not be so great, as more detailed records are usually available and supervision of squadron training permits earlier detection of many undesirable traits of new pilots.

For the single-place aircraft squadron, however, where training must be largely restricted to ground school indoctrination, briefings, handbook reference and preflight familiarization, the pilot is pretty much on his own except for chase pilot and flight leader supervision.

Fortunate indeed is the squadron which can accumulate sufficient evidence to forestall an accident-producing potential *before* the proverbial cloud of dust at the end of the runway focuses attention upon an individual.

That sort of thing obviously is not accident prevention, but is more typical of the familiar action known as "putting out brushfires."

For example, a jet pilot was lost over the side on a night carrier landings when he took his own cut after a wave-off—during which he remarked "it's too late now!" He did not have his hook down. A few minutes earlier he had displayed a certain weakness to anger in swearing over the radio concerning circuit breaker difficulty which deprived him of exterior lights.

Less than a year and a half before, the same pilot was involved in a mid-air collision when he (a) chased another aircraft which he considered to have cut him out of the landing traffic pattern (the other airplane was practicing flame-out approaches), (b) joined up, unseen by the other pilot, and then (c) collided with the other airplane when he attempted a slow roll over the offending aircraft. An endorsement of *that* AAR commented that this ". . . act . . . demonstrated not only irresponsibility . . . but very poor judgment, a haphazard attitude towards safe flying and exceedingly poor airmanship."

Further to emphasize the disproportionate lack of significance attached to this human "quality control" factor, consider the tremendous amount of concern *and* money devoted to the research and design of improved airplanes, as compared to the limited development of the area of *human* engineering.

For the record, that problem is not unique to naval aviation, as an Air Force spokesman, discussing a related problem has said that the Air Force has been paying "billions for equipment and peanuts for people."

Because there is as yet no magical electronic eye which can scrutinize this amazingly complex thing called a pilot, and thus neatly classify him according to his professional capacity, the problem must be dealt with in some other manner. The optimum pilot procurement program, the most efficient selection process available, and the most determined effort of the training command to mold that raw material still produces a product which remains humanly subject to variation.

For the present then it is suggested that additional answers must be sought within the squadrons themselves. To varying degrees this has already been accomplished in a number of flight activities. One squadron in particular reports an interesting approach to the problem.

Using a standard 8 x 5 card, that squadron's safety officer established an individual pilot information file. On the card appears such initial information as name, rank, date of reporting, number of flight hours, plus any other available information.

Subsequent entries consist of significant comment, which may be logged at any time by flight leaders and qualified personnel who may have observed infractions of instructions and operating procedures.

As suggested sources of supplementary comment, squadrons might consider appropriate contributions by the flight surgeon, the navigation officer, and the training officer. The survival officer could likely offer pertinent comment regarding an individual's tendency to mistreat, misuse or ignore proper procedures and items of equipment.

And of course the Landing Signal Officer has traditionally been a reliable source of pilot ability evaluation in that phase of operations.

Here the point is emphatically made that the marvelous potential of this system, without proper monitoring and control by at least one responsible person, can conceivably be distorted into some form of petty "gestapo" affair. The wise commanding officer will not permit the positive value of the system to be jeopardized by improper administration.

Understandably, the majority of cards will accumulate few remarks, and equally evident is the fact that the card will be of little value until repetitions of specific entries, or a *significant relationship* of several entries indicates a definite unsafe trend or tendency on the part of the pilot.

When occasionally this relationship of entries occurs, the pilot is counseled by the Safety Officer together with the CO or other senior officer who may point out pertinent entries and advise the pilot of the seriousness of a continuation of the trend, or they may suggest, for example, some form of "buddy" training from a senior pilot.

As a measure of the effectiveness of the system, the squadron reported that in the first year of its operation, the pilot safety card index has been the means of detecting or confirming several instances of unsafe flight and ground operation practices.

One such record, for example, showed several citations of taxiing with excessive power. The last entry on the card reported a ground accident which occurred on a cross-country flight, in which another aircraft was substantially damaged by unnecessary jet blast.

The erring pilot was "squared away" on that phase of operations, but the safety officer ruefully admitted that here was a perfect example of how sometimes the system can fail unless followed up completely.

Again, it should be pointed out that such a card system is not proposed as a means of invoking disciplinary action, which concept could involve a number of unwanted considerations resulting from unwarranted abuse or "little black book" type of misuse of the process.

However, the card report, *properly* maintained and *properly* interpreted, would provide a valuable insight in the evaluation of a pilot whose professional performance appeared to require improvement.

The individual's card is available for his inspection at any time and *is not subject to general inspection.* The source squadron expressed conviction that the pilot's reception of the system was definitely positive, with thorough approval being expressed of the effort made to assist the pilot.

While this method is definitely a step in the right direction, there still remains the need for a more adequate means of monitoring the *total* progress of the individual pilot.

For the commanding officer then there is clearly indicated the responsibility to provide a means of observing the progress of his pilots—not merely from the standpoint of gunnery scores or current instrument qualification, but in the aeronautical adaptability and judgment of the pilot. Without intruding unnecessarily, the CO should avail himself of any valid information which appears to affect, adversely, the competency of his pilots. For be it professional skill, physical and/or mental problems, or even domestic troubles—the pilot cannot afford to divert his mental processes to problems other than the immediate and ultimate requirement to accomplish his mission—safely.

In this respect the CO should exploit the services of the Safety Officer, the Flight Surgeon, the Chaplain, each of whom is understandably concerned with the well-being of the pilot.

A forthright review of the whole problem of *helping the pilot to help himself* should convince all concerned that there is, in truth, no vision like supervision, and that aviation safety is EVERYBODY'S business. ●

CHECKLIST FAN

"Going through the before-start-checklist on my A3D, I found the wingfold position handle in the spread position. Had I started the aircraft and not found this, the wings would have spread and I would have damaged three aircraft —mine, one on the right and one on the left. This last had the skipper sitting in it, waiting for turn-up.

"Someone moved the fold handle while the plane was shut down, and except for the checklist, this could have been a dandy. The checklist is still a *must*, no matter the reason to expedite takeoff."

KNIT ONE, CURL TWO

Here's an Anymouse that may make your blood run cold; it has lasted for eight months. It's a sad commentary when things reach this state, but back then, to a relatively new Ensign out of the Training Command, a trifle awed at the big carrier navy, it seemed the thing to do. As the hairy months became longer and longer, however, it changed from a normal situation, through various stages of ridiculousness, to a deplorable condition. By the time I realized this, it was too late.

Briefly, the situation was this: Our squadron was in the process of night qualifying pilots in preparation for our coming deployment. Because our aircraft is a multi-engine carrier based plane and there was not enough time to qualify all 40 pilots, we were going to use the team system, one pilot being plane commander for the whole cruise and the other permanently in the right seat.

The plane commanders were designated by the Register (I didn't even know what that was then), and I was a borderline pilot who they decided to qualify anyway in case they needed me (my big chance). The final decision, of course, rested with the LSO and that's where my trouble began. I qualified fairly easily. but the LSO turned thumbs down on a senior officer in the squadron. The conflict between the Register and the LSO was resolved by the following solution (Hang on!):

This officer would be plane commander and maintain strict responsibility for the flight but I would fly the plane and make all the take-offs and landings. Just where my pilot authority started and his LCDR authority stopped, I never found out. But again, it seemed like a pretty good deal at the time; at least I was in the left seat.

The thrill wore off rapidly however, as I soon learned that my plane commander was a good deal saltier than his flight proficiency indicated. In the few scattered instances I dwell on briefly, I realized I was at fault for not insisting on the procedures I had learned just a few months earlier while earning my wings, but as an Ensign I too often paled after those two and one half striped dagger-like looks killed the few suggestions that I managed to mumble out.

Two hundred flight hours and seventy night and day carrier landings ago we first took off and landed without using a checkoff list. We haven't used one since.

Once he turned off his UHF, mumbling something about senseless babble. It's been off 50 percent of the time ever since, no matter who wanted to call us or for what reason!

Squadron doctrine calls for voice communications with wingmen while in formation flight because of our limited visibility aft. We always led (two and one-half stripes again) but never once was I al-

lowed to place or even confirm the position of my wingmen. "They should know where to be," he said. We broke into the No. 2 man three times.

Our LSO emphasizes having the aircraft set up at the 180. Several times I didn't even get the controls until after the break and then things were so fouled up it often resulted in a rather colorful pass.

Of course, I didn't have too much trouble during the bulk of the flights. He was either reading a novel or was asleep—even at 100 feet off the water looking for submarines. I even found three subs while he was asleep.

Now the cruise is over, and I am an older and wiser JG and due for transfer. I guess I still lack the courage to tell him or the skipper, who got me into the situation, what I think of it. I'm even ashamed to write you, but I want someone to know. Safety officers should be aware of such a situation (if there can be a parallel anywhere in the Navy) and be advised that we were just one big accident that *forgot* to happen.

From our observer's seat, it seems as if even a lowly ensign could tell somebody his troubles—say the Flight Surgeon, hmmm?

AGING FLIGHT

"Prior to takeoff on a return cross-country to the East Coast, we were briefed by aerology that the weather was marginal but we decided to file VFR for we thought we could make it back before the weather set in. Our S2F was about 45 minutes late taking off while the pilot made his goodby to his girl friend a rather long one.

"Finally we were airborne, barely under our briefing void time. The weather looked fine on takeoff in Michigan but as we neared the mountains the weather closed in on us and naturally we filed IFR in the air. The cloud tops were about 15,000 feet and with the OAT well below freezing, coupled with a high moisture content, we experienced moderate to heavy icing.

"Between Parkersburg and Elkins the starboard fire warning light came ON. Our cockpit heater had failed about 15 minutes after takeoff and every effort to restart it failed. It was bitterly cold in the cockpit, and to top it off we were constantly getting higher altitude clearances.

"Back to the fire warning light—we decided not to feather the starboard engine because we didn't believe that we could maintain single-engine speed in these icing conditions. We were shook to say the least. Every field in the vicinity was below minimums but we decided to try an approach at Elkins and declared an emergency.

"This was carried out but it was snowing so heavily that we could only see a rotating beacon at the field minimums. Executing an emergency pullup we proceeded to Pittsburgh.

"We made it into Pittsburgh on the second surveillance approach, just about frozen solid. I believe I aged 10 years on this flight. Never again will I ever be a second-guesser of weather."

Just One Of Those Things—

(A) Senior Lt.: "The most frightening experience of my life . . ."
(B) Lt.J.G.: "That guy isn't even safe for solo."
(C) Lt.J.G.: "The next time I have to fly with that man I'm going to ground myself."
(D) Cdr. & Lcdr.: "You can't do anything about it, it's just one of those things you have to accept."

"One of those things" is when the air group commander leads the squadron in an air show. The man has never bothered to read squadron doctrine, much less use it—is not aware that flying with one wingman, not to speak of a whole squadron behind him is any different from flying alone.

For *four* airshows and even more rehearsals the same comments issue forth from the readyroom . . . But what can you do when the most senior man in the outfit is really dangerous to fly with? Here's how the "maneuver" usually goes:

The squadron rendezvous is a conventional 160-knot circle, forming the design to be flown for the parade. Then the leader sweeps by at 200 knots and says "Join on me." Well, just about the time the other 10 planes get almost caught up, the leader whips into a 30-deg. plus bank (into the formation of course) and you have all the ingredients of the most spectacular 12 plane midair collisions in history. You should have seen the formation(?) scatter.

These experiences range from mildly hairy to terrifying.

The crime is that nobody says a word when the debriefing time comes (the last flight was never debriefed with the leader!)

We have one more show coming up. My question is: Should I turn in my wings before or after?

anymouse

and his hairy tales

headmouse

Headmouse is pleased to pass on a package of carrier operations comment just in from a fleet cousin. Of primary importance because it reflects the experience of one of the first-deployed F3H squadron, Headmouse believes much of the information should prove valuable to other squadrons flying some model of the new family of aircraft. In offering this informal report as something of an experiment, Headmouse would be interested in reactions to this method of getting the word out— and in receiving similar reports from other operating outfits. Squeak up, folks!

Dear Headmouse:

This is just a short note to advise you of some of the oddities which have occurred in the first third of our "vacation" with F3H-2Ns. We have learned a lot about the geography of the flight and hangar decks and the hows and whereabouts of some of the pitfalls of safety.

Let's start with the *Demon* on the hangar deck. Our brownshirts have finally gotten the word on **brakes.** When the whistle blows they now assume that it means EMERGENCY STOP. With this novel innovation our hangar deck accident rate has dropped to zero. Moral: If the brakes are boosted or not boosted—Mash'em.

Briefings: You must start at least an hour and 15 minutes prior to the flight with preflight briefing, operational or intelligence briefing prior to the preflight brief, as you well remember you can't leave out the smallest routine detail because it will vary from day to day. The modern concept is: There is nothing routine; some things are just repeated more often than others.

Manning aircraft is now called 30 minutes prior to scheduled launch. You can't preflight my $1,250,000 aircraft in three minutes and do it right. The plane captain uses two hours and all maintenance personnel spend over 10 man-hours to preflight! *This Anymouse's tail (if you'll pardon the pun)* is worth *over a million so insist that the pilots get plenty of time to look over the Big Bird.* As cousin Sagemouse said: "Don't rush into a cat's paw, walk around him."

When turning up be sure that you enter the holdback gently, but gently!

Insure, check to ridiculous extremes, the catapult bridle hook-up after tensioning.

We use (a) cat crewman (friendly cat), (b) squadron structures chief, (c) another pilot. We haven't had a bad hook-up since. I cannot overplay this point. *You must check the hookup after tensioning as the* Demon *is super critical and all single-point, no eye-bridles will present this problem.* Just for info, I make a bi-weekly check of the arrestor lanyards and cables and we have eliminated the bridle arrestor failures and subsequent holes in the lower fuselage.

Takeoff: Insist that all pilots rotate the aircraft correctly. Keep after them by personal observation until each pilot has this perfected during day qual and then make them do it on the gages during the day so that first black-as-an-inkwell night shot is easy.

Rendezvous utilizing Tacan always! Practice in VFR day flights makes those black nights easy.

Cruise as if you could never get another bite of cheese, I mean another bit of JP-5, because you can't. Tankers carry avgas (gives the *Demon* indigestion). Remember

you can always dump or burn it out in a hurry with afterburner.

A *Demon*, is out of commission, down, no good, won't fly, can't fly, if the radar or IFF, or the Tacan or the Radar altimeter is inoperative. This doesn't affect availability 2 percent and has paid off so many times in NO ACCIDENTS that it is not even considered as the negative side of a calculated risk. Grampaw "P" (a mouse from the old house) once said, "If you can calculate the *risk*, it isn't worth it."

Descent: Insist that all night recoveries be made under CCA control. At the start of this trip CCA couldn't vector us to the rathole to save a lady mouse, but, with practice and a lot of local cooperation and coordination with Ops, CCA, LSO, pri-fly, it is now routine and gives a good landing interval. Insist that all night approaches be CCA. That straight-in takes all the hair off the cat's tail.

The mirror: Next to bells on cats and the angle deck, this is the biggest boon to us poor seamice since sex was invented. Note cousins—the mirror isn't perfect and when our mirror worked it was possible to have the meatball *on* the mirror and *hit the ramp!* Check the mirror before day and before night ops for working. First clue—the meatball is slightly out of focus and the bolters increase with pilots swearing, "The meatball was on the mirror!"

Rollout: That's taken care of by a mousetrap arrangement, but don't forget to hold the stick back when rolling back (out of the gear) or else you'll hit your stabilator on the deck when you apply brakes. Note; don't preach speed when leaving the gear as it takes 20 seconds to retract the wire and you can go slow and be across the safety line prior to wire retraction.

Tactics: A couple of useful clues. You have Tacan and therefore know your pigeons at all times. If a controller is off a few degrees or a few miles let him know that you know and you'll be surprised at the overall improvement it makes in the quality of their close control. Insist that all nav aids be operating correctly. Make a report each flight to CAG or Air Ops on everything that is wrong. The ship can only fix what they know is inoperative or operating at reduced efficiency.

This started out to be a short note, but it's getting long so a few more fast ideas. A pilot in pri-fly (division leader if practicable) with an Emergency Kit during all Air-Ops. Observe at least one recovery daily from the platform. Snoop around your maintenance procedures. You may find a cat in the bag. Check those ejection seat pins for corrosion weekly. All the other "routine" safety actions too.

SAFETY MOUSE
World's Foremost Fighter Squadron

P. S. Don't forget your slats!

Dear Headmouse:

. . . I believe I detect a creeping in of an old malady . . . the acceptance of the findings of obviously unqualified accident boards . . . which usually imply that "pilot error" is the main cause of an accident . . .

. . . In the December issue (page 15) . . . an analysis is made of a *Banshee* accident. Here "main inverter" failure is discussed and "alternate AC generator system" mentioned. This would confuse one, trying to decide if it was an F2H-2 or a -3 or -4 . . .

It was a Dash Four. Our man who omitted the model has already had his coffee rations cut. As to the electrical terms, the accident report quotes the surviving pilot as saying the wingman had "lost the main inverter . . ." As you point out, the Dash 3 and 4 have a standby inverter but no main inverter as used at various times in the accident report—Ed (see more below).

. . . The next article in January, page 18, is even more incorrect . . . a TV-2 accident that started with fuel discharging from the canopy defroster ring. The pilot shut down the engine, apparently made a successful flameout landing and then was snookered when the right gear and nosewheel partially collapsed. The board concluded that the "pilot erred in neglecting to use the emergency landing gear extension system to lower the gear, and he depended upon the normal system hydraulic pressure available from a windmilling engine to provide aileron boost, extend landing gear and lower speedbrakes."

In your own "Safety Bulletin" of April 1955 under "flameout landing techniques" for the TV-2 it states "The windmilling engine will provide sufficient hydraulic pressure to actuate landing gear and speedbrakes within an acceptable time."

TV-2 Flight Handbook Inter. Rev. No. 1, 25 May 1955, states that at 5 percent windmill speed, the gear will lower and lock in 12 seconds. The emergency system extension time may be as long as 40 seconds, and at best is 20 seconds under ideal conditions (see page 3-11 of handbook AN-01-75FJC-1, 15 Aug 1956). Which system would Headmouse use in an actual flameout?

LT, USNR

True, a windmilling engine will normally provide hydraulic power to actuate gear and speedbrakes but note the words "within an acceptable time." The pilot had an asymmetric load and was holding the heavy wing with aileron boost. After the gear was dropped aileron boost was lost and he didn't turn it OFF. It must be assumed that the loss of boost resulted from hydraulic pressure diverted to lower the gear.

The last sentence of the pilot's statement which was evidently overlooked by the accident board says, "I lowered the gear and dive-brakes about the same time, possibly draining the system of the pressure that I needed to lock all gear down." This action disagrees with statements made earlier that the gear was lowered between the 180- and 90-degree position and the speedbrakes dropped in the groove.

If the former is the case, then it is possible the windmilling engine could not supply the sudden pressure demands. If the second is true, then a malfunctioning pump may be responsible. No statement was submitted by the engineering officer, so there appears to be no positive way to establish the reason for malfunction of the hydraulic system.

In reporting the findings of the board, (which was composed of the squadron Maintenance Officer, Safety Officer and Assistant Standards Officer) Approach *considers that, in general, these groups may be regarded as competent and qualified to the extent that any such group is qualified. While, understandably there are occasional instances of inaccuracies in the findings and/or recommendations of AAR boards, the tremendous achievements and benefits of the system far outweigh its discrepancies.*

With a readership which includes the sharp-eyed scrutiny of individuals such as Lt, USNR, Approach *will dig even harder to avoid presentation of invalid dope. Believe us, we're not agin pilots!—Ed.*

LOUD BARK, SMALL BITE

Lightning and St. Elmo's Fire are usually more disconcerting to the crew than damaging to the aircraft, yet can bring complications.

ONE MARCH evening at approximately 1930 CST, while flying in an R4Q-1 at an altitude of 11,000 feet, going East on V-18, in the vicinity of Jackson, Miss., the following unusual incident occurred.

Turbulence was moderate, lightning infrequent, rain was very heavy and the outside temperature gage showed 1° C. A lower altitude had been requested at each reporting point for the previous hour and a half and refused because of traffic.

St. Elmo's fire was prevalent and in the heavy rain, the drops glowed as they struck the aircraft, giving off a green neon appearance to the windshield. Both pilots' attention were directed to a bright glow which built up on the nose section over a period of a few seconds and was accompanied by a rapid build-up of low frequency noise on the receivers. There followed a photo bulb type flash and a report quite similar to that made by a 3" 50 caliber gun.

For a few "long seconds," the pilots were blinded. The white dome lights had been turned on prior to entering the storm area and undoubtedly reduced the period of temporary blindness. If the build-up had not been noticed, the "report" would most probably have been diagnosed as an explosion in the nose section.

The aircraft was inspected and

no damage noted. All radio equipment was still in working order. Passengers reported that the cargo compartment "lit up like a photo flash."

An inspection in daylight revealed a row of small rivet like holes; some burned through and others merely fused, from the starboard pitot tube aft along the fuselage. The static discharge or lightning strike apparently started at the pitot tube and warmed up the copilot side of the aircraft as it worked aft. There was very minor damage to the R4Q-1.

WHILE at 17,000 feet on a night crossing between Guam and Tokyo the pilot of an R7V-1 had this experience with electrostatic discharge.

"We were about 200 miles south of Iwo Jima," he said, "approaching a warm front. The radar was working satisfactorily, and as predicted by aerology, the squall-line of thunderheads was quite prominent and visible on our APS-42 indicators. We began picking our way through what appeared to be the soft spots in the squall-line. About 10 minutes after entering the frontal area we began to experience a high degree of static in the VHF receivers, and a very rapid build in intensity of St. Elmo's fire on the front and side windshield panels.

"Within a very few seconds two arms of a bluish amber color projected forward at 30-degree angles from the nose of the aircraft just above the radome. Along with these 'arms of fire' the windshields became saturated with blue St. Elmo's fire and static was building very rapidly on the VHF receiver.

"About five minutes from the start of this action the two arms of fire joined into one blue core projecting from the center of the nose of the aircraft and a very loud crack or crash resounded. This was heard by the radioman and flight engineer. Anticipating a possible lightning strike, the ART-13 transmitter was cut OFF prior to the discharge. However the radar scope was seen to have an erratic appearance as though the range was changing from 100 to 30 miles and back in one full sweep of the antenna. These appeared in pie-shaped sectors of about 45 degrees each. The antenna field was set on FULL SWEEP at this time.

"Ten minutes after the first buildup and discharge there was a second one. This one seemed a bit greater in intensity, and as the charge began building, all VHF transmitters and receivers were cut OFF. As it resounded with a louder crash there was a very bright glow seen coming from the entire forward part of the aircraft. This was noticed by the reflection given off by the clouds. It appeared as though the aircraft were a huge neon bulb.

"Immediately after the second discharge there was a loud thumping on the top of the fuselage on the port side. It was apparent that the port flat-top antenna was broken. Fearing that it might puncture the pressure-capsule of the fuselage, we immediately descended. It was found that by reducing airspeed to 150 knots with 60 percent flaps, the thumping almost ceased.

"After the second discharge, no targets were visible on the radar scope regardless of range. It was also noticed that the modulator unit would not hold pressure. We landed the aircraft at Iwo Jima and had the antenna removed. After a visual inspection of all other antennas and the radome, everything seemed otherwise normal and the flight proceeded on to Tokyo.

"Upon arrival at Tokyo it was noticed that the aircraft skin on both sides of the fuselage from the forward part of the cockpit aft to opposite the props had a bluish cast. This discoloration was the same as that which aluminum takes on when a moderate amount of heat is applied to it.

"It was observed that there was no lightning apparent in the immediate vicinity of the aircraft at the time of these two discharges. However, as the aircraft passed through the north side of the front, some lightning was seen in scattered thunderstorms towering up to 20,000 feet above sea level."

No Notice

WHILE flying at 11,000 feet in stratiform clouds the pilots of a P2V noted a nearby lightning bolt. Smoke was reported in the afterstation by a crewmember and a precautionary landing was made at Memphis.

Damage to the aircraft included the automatic pilot servo motor burned out, varicam indicator circuit and navigation lights inoperative. Though Memphis was reporting a broken cloud layer and thunderstorm activity, no thunder storm activity was sighted due to IFR conditions.

Lightning and Fire

WHILE a Navy transport was cruising at 9000 feet over Pennsylvania, a sudden flash more vivid than those preceding was noticed. At the time the plane was passing through a thunderhead, one of many met on the flight.

Continued next page

LOUD BARK, SMALL BITE

Continued

Immediately after the flash, the pilot noticed a burning odor. It was traced to the prop deicer pump, located aft of the pilot's seat. The pump was turned off and the flight engineer took a CO_2 bottle and stood by until the motor had cooled. As he turned to station himself in the radioman's seat, he discovered flames shooting up through the floorboards under the seat.

He seized a fire axe, chopped a hole in the flooring and extinguished the fire using CO_2.

Examination on the ground showed that the fire had been caused by the lightning bolt which struck the fixed antenna on the belly. It melted the lead-in at the insulator, then jumped to the nearest metal conductor which was the supply line for the alcohol deicer. The force of the bolt fused the deicer pump and punched holes in the supply line, allowing alcohol to escape and burn. Some hydraulic fluid which leaked was also ignited.

Loss of Antenna

AN R5D, halfway between the Azores and Newfoundland, was flying through continuous clouds with sleet, snow and turbulence. A charge of static electricity created a ball of fire and an internal explosion in the hell hole. After landing, one antenna mast and the fairlead for the trailing antenna were found to be blown off. Several small holes were blown in the belly skin of the fuselage and a portion of one frame was torn away from the skin. Other minor damage included the port wheel door and numerous small burned areas on the undersurface of the wing center section and port wing.

Loss of MHF and UHF

A PORTION of the weather between the Azores and French Morocco was overcast with tops at 25,000 feet. The P2V-6M entered a cloud bank at 9500 feet with radar and radios turned on, but no transmissions were being made and the trailing wire antenna was reeled in. Shortly after entering the clouds a bright lightning flash was seen accompanied by a loud noise.

The plane was severely jolted for an instant and then returned to normal flight. An in-flight inspection of the airplane showed normal flight characteristics with response to control movements normal. Further inspection revealed that the MHF transmitter and UHF transceiver were out.

A total of 67 burned spots were found from the pitot tubes under the nose to the top of the rudder and from wingtip to wingtip.

Blind Flight From Strike

A CIVIL transport was on an IFR flight plan at 8000 feet in light icing conditions with some turbulence. The pilots occasionally observed lightning to the right and left in the far distance.

Soon lightning struck the aircraft. It appeared to be a red ball of fire with great brilliance. The PC said the cockpit lighting was in a near bright position, but in spite of this he was temporarily blinded and asked the copilot if he could see the instruments. After about 30 seconds the copilot was able to see the artificial horizon faintly, so the PC turned the controls over to him. The PC said the instruments appeared to dance and change colors rapidly for about 10 seconds and it was several minutes before the sensation of changing colors of the instruments cleared. A deep purple hue was observed out the cockpit windows.

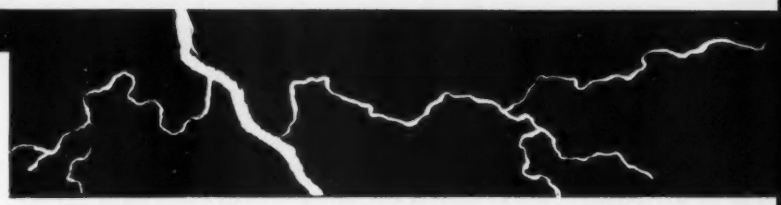
The copilot said it was nearly five minutes before his vision was completely back to normal and the navigator was completely blinded for between 5 and 10 seconds then saw only a yellowish pink light which receded gradually until normal vision returned about two minutes later.

The VHF transmitter was inoperative although the VHF receiver operated normally.

With regard to lightning blindness another civil transport pilot suggests: the use of a little trick he learned in the Air Force: Namely, grab the Aldis lamp and turn it on the instrument panel. The intense light from this lamp will enable you to see until your eyes return to normal."

A review of these and other reports has failed to yield any recommendations of consequence in the way of dealing with or avoiding lightning. However, knowledge of the following facts should help you respect the potential of lightning and not fear it.

Aircraft communications sys-



tems are vulnerable to lightning but there is no way of predicting whether a strike will harm it.

Also, a lightning strike may affect the magnetic compass. A commercial transport's magnetic compass was reported to have taken on 50 degrees of error from lightning. It is suggested that after an aircraft is reported stricken by lightning, the compass be swung before releasing the plane for flight again.

Static electricity is not regarded as a likely ignition source in the compartmented fuel tanks of an aircraft in flight, and a lightning strike of sufficient intensity to puncture the skin generally occurs at the extremities such as wingtips, edges of control surfaces, radio antennae . . . where fuel is not present.

The tendency for precipitation-static sounds to increase rapidly in intensity should be regarded as preliminary signs that a discharge is imminent. Wearing a headset close to the ears when this buildup happens is therefore considered inadvisable.

A review of considerable previously published material failed to indicate that St. Elmo's fire (corona) is anything other than harmless blobs or streaks of light which affect communications. Yet several cases suggest St. Elmo's fire has caused damage.

Considering the temperatures likely at the altitudes flown, this statement from an RCAF publication appears significant: "When a charge is generated during humid weather it is more likely to bleed off than accumulate. That is why you seldom get a wallop from the door handle of your car in the summer but receive a shock on touching it in winter." Is it possible that corona discharge becomes more than a harmless blob of light at lower temperatures? There's not enough evidence to say, but it is a possibility."

Other than being prepared for emergency action brought on by lightning strikes and static discharges there are few practical ways to stay clear of it. An Air Force publication lists these items, but observing them will not always be possible.

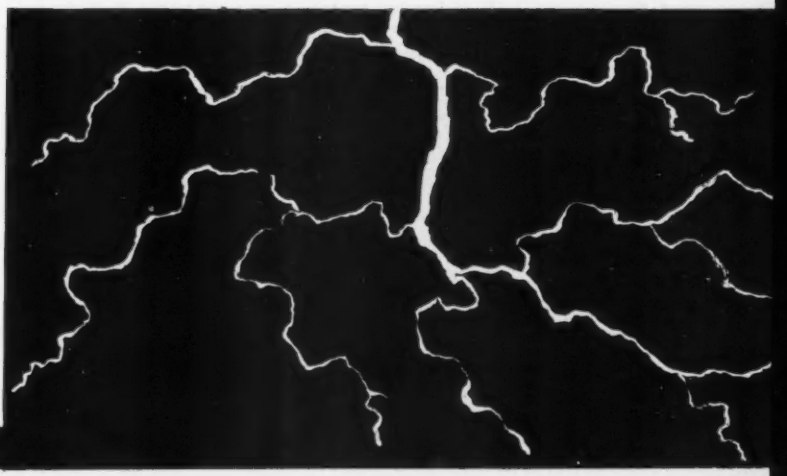
√ Avoid flight through cumulonimbus clouds, at levels where the temperature is between 15° and minus 10°F, for high potential gradients and consequently disruptive charges can be expected.

√ Avoid flight in the immediate vicinity of cumulonimbus clouds, especially when they have given manifestations of thunderstorm activity. It is preferable to keep at least 2500 feet or more away from them.

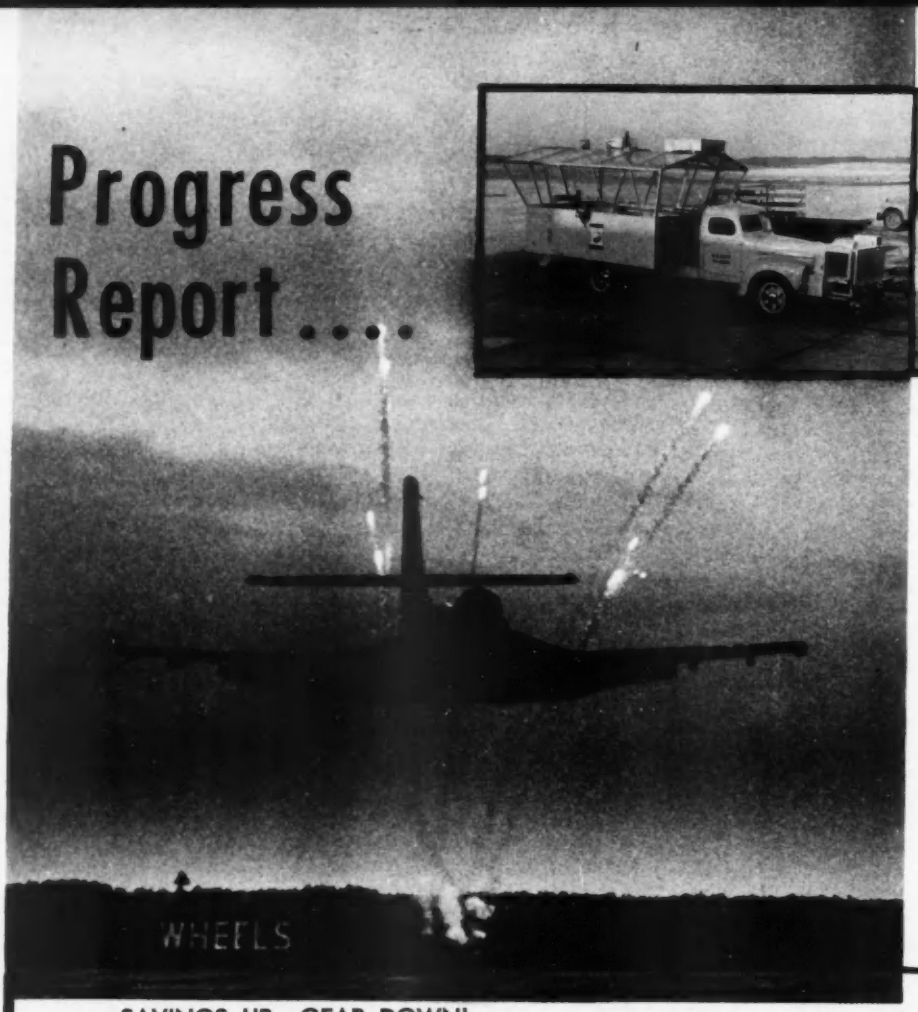
√ Avoid flight through moderate or heavy rain and/or snow, sleet, hail or ice crystals, especially at levels where the temperature is from 20° to 40°F, particularly if the precipitation is from cumuliform clouds.

√ If the precipitation static and/or corona discharge is moderate to severe, and there is evidence from the temperature, cloud, and precipitation conditions that the airplane is in a zone of strong potential gradient between oppositely charged regions, reduce speed. Then seek a lower level where temperatures above 40°F prevail, or leave the given cloud and precipitation conditions.

Naval aviators having info or comments on experiences of this kind are invited to submit them via official channels or Anymouse forms for the good of the order. —Ed. ●



Progress Report....



SAVINGS UP—GEAR DOWN!

THE number of persons responsible for preventing wheels-up landings has proved to be far greater than expected.

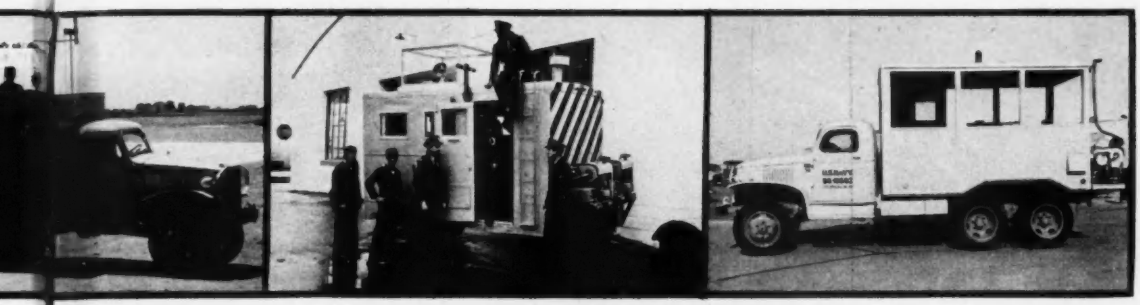
Were it not for their constant vigilance and outstanding performance of duty, naval aviation would have suffered *more than twice as many wheels-up landings* so far this year (See "The Big Payoff," page 23).

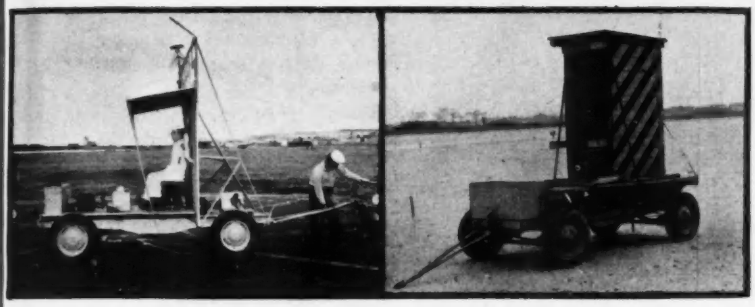
The prompt action of these individuals in waving off the aircraft prevented considerable damage to the planes and possible injuries to the flight crews.

Unfortunately, space limitations do not permit reporting all of the details of each "save." However, credit will be given, and justly so, by publishing the name and unit of the man or men, the number of previous saves, and the model aircraft which was prevented from having an accident. The majority of the saves listed below occurred between November 1956 and April 1957.

To each of these individuals cited, WELL DONE and THANKS!

ANDREWS, C. A., AD1 LAWS, E. H., AC2	NAS New Orleans "	USAF C-45
ARFMAN, C. W., SN	GUMGROUP 1	F3H-2N
BATTLE, L. W., LT SHEWALTER, C. E., AN SILVERS, R. C., AB3	NAS Columbus " "	F9F-6
BERGERSON, R. R., AA DE SANTIS, V. A., ABAN FLEMING, G. F., Civilian WHITSITT, H. A., AD3	NAS Atlantic City " " "	AD-5
BLAKE, H. R., LT	ATU-206	F9F-2
BOBINSKY, J., ACAN	Air Wing Staff 83	F9F-6
BONNEY, R. A., Capt.	ATU-206	F9F-2
BOWEN, R. F. AC2	NAS Moffett	AD
BRADFORD, T. E., AA	NAAS Whiting	SNJ
BRUSINO, J S., AD2 CHOLEWA, W. T., AD2	NAS Niagara Falls "	F2H-2
BUDD, R. R., LCDR	ATU-206	F9F-2





In their unending campaign against wheels-up landings, air stations have developed various runway installations such as those pictured here. Many of these provide radio and other facilities for the work and the comfort of wheels watch, and/or runway duty officer. These are in addition to basic requirements (OpNav Inst. 3750.7A, para 4B1) such as a remote multiple flare system.

BUTRAM, F. D., AT3	VA-85	AD-6
SMITH, L. C., AE3	"	
*CAHN, B., AC3	NAS Quonset Point	AD
CARVER, G. B., LT	ATU-206	F9F-2
CRADER, C. R., AC3	NAS Pt. Mugu	F3H-2M
**CURRY, N. V., AB2	NAAS Cabaniss Field	AD-4
GREENFIELD, J. L., AN	"	
ELLING, W. A., LT	ATU-206	F9F-6
FATOUT, C. G., ACAN	NAAS Kingsville	F9F-5
FIGUEROA, M. J., AB2	NAS Atlantic City	F4D-1
COOK, W. C., AA	"	
FORINO, R. J., AN	NAAS Whiting Field	SNJ
FOWLER, M. G., AC3	NAAS Kingsville	F9F-5
GREGORY, D. G., LTJG	NAS Olathe	F9F-6
CHASE, R. D., AD3	"	
HOLLINGER, H. H., ACC	"	
MILLER, F. G., Civilian	"	
SMITH, J. R., Civilian	"	
*HAWKINS, C F., AB3	NAAS Cabaniss	AD-4
JONES, R. E., AC3	VA-113	F9F-8
HENRY,L. B., AO3	VF-114	
*HENRY, L. B., AO3	VF-114	FJ-3
HERRING, M. J., AB3	NAAS Whiting Field	T-28
HIGGINS, J. B., AC3	NAAS Kingsville	F9F-5
HUNDLEY, D. S., AN	NAS Pensacola	F9F-2
JOHNSON, C A., LCDR	ATU-206	F9F-2
*JOHNSON, C. A., LCDR	ATU-206	F9F-2
JOYNT, R. P., AC1	NAAS Kingsville	TV-2
JULIAN, L. A., AC2	NAS Miramar	FJ
KIMMETT, J. R., AC3	NAAS Brown Field	AD-5
LEROND, J. M., MAJOR	ATU-206	F9F-2
*LEROND, J. M., MAJOR	ATU-206	F9F-2
LUCAS, J. P., AC1	NAS Moffett GCA	F3H-2N

Continued next page

TRUTH and CONSEQUENCES

A DIGEST
OF SIGNIFICANT
AIRCRAFT ACCIDENTS

SHORT CUT—"How's the sequence for our destination?"

"Like always when you want them; missing."

"Great! Oh well, let's see if we can find something close to there."

"Say, here's one. Not too far away and it doesn't look too bad either: Thin obscuration with four miles in haze."

"Sounds okay. How's NAS Eastside holding for an alternate?"

"Must be the same stuff. Their 1230 sequence has thin obscuration, high scattered and five miles in smoke and haze. It's forecast to go to six in haze."

"Good enough. Let's get signed out and go. Anyway, if it clobbers a little I've had close to half a dozen actual GCA's in the last couple of months. How about you?"

MC CURNIN, C. J., ACC	NAS Miramar	F7U
MEYERING, A., LTJG	VF-724	F9F
MASSEY, J. K., SA	NAS Glenview	
MOHRHARDT, R. F., LT	ATU-206	F9F-2
*MOHRHARDT, R. F., LT	ATU-206	F9F-2
NEY, E. L., LTJG	VA-172	F9F-8P
O'CONNELL, J. M., LT	ATU-206	F9F-2
PARSONS, J. L., AO3	VF-123	F2H
PAUTSCH, B. R. E., CAPT	ATU-206	F9F-2
*PAUTSCH, B. R. E., CAPT	ATU-206	AD
**PAUTSCH, B. R. E., CAPT	ATU-206	F9F-2
PEARD, R. W., CAPT	ATU-206	F9F-6P
*PEARD, R. W., CAPT	ATU-206	F9F-2
PEART, G. T., LT	NAS Denver	F9F-6
MYERS, E. R., AN	"	
RICKER, D. R., AC3	NAS Oceana GCA	TV-2
HARDIN, C. A., AC3	NAS Oceana GCA	
EDWARDS, D. D., AC3	NAS Oceana	
ROBERTSON, C. G., ACAN	NAS Moffett	FJ-3
YOUNG, R. G., AC3	"	
ROBINSON, J. C., CAPT	ATU-206	F9F-6P
RYSER, N. R., AN	NAS Norfolk	F9F-5
SCOTT, J. H., LT	ATU-206	F9F-2
SEVERSON, R. I., CAPT	ATU-206	F9F-2P
SIMONS, R. W., PFC	MCAS Miami	F9F
SPROVIERI, F. E., AN	VU-7	F9F-6
¶STULCE, S. L., SGT	MCAS Cherry Point	F9F-8
PHILLIPS, C. F., LT	VMCJ-2	
§STULCE, S. L., SGT	MCAS Cherry Point	FJ-3
ANDERSON, E. A., MAJOR	"	
VAN HOUTEN, L. P., LT	VA-106	F9F-8
RAMSEY, J. D., AD3		
WARDE, W. A., LT	ATU-206	F9F-2

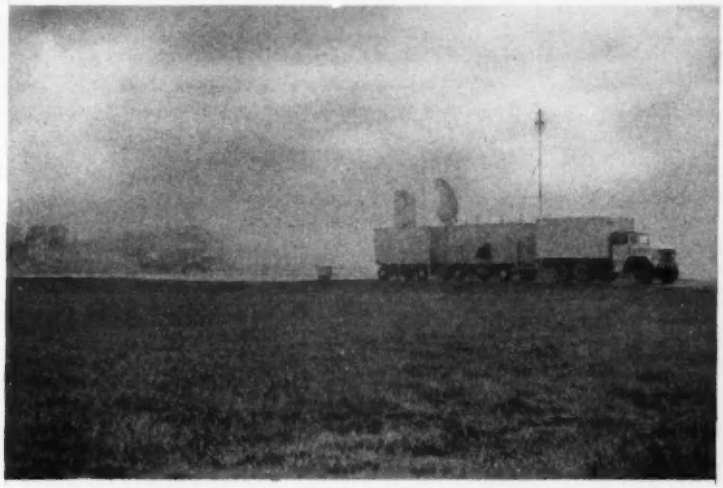
"Nine total, seven actual. Remember pal, I was on that Med cruise with you."

"Well, we've got this thing knocked. With that southwest wind I figure 1 plus 29 to destination and 9 minutes to the alternate. Plenty of fuel for that. How does 1430 sound for an ETD?"

"Fine with me."

In essence, this was the dialogue of two *Banshee* pilots beginning a cross-country hop. The weather briefing was void after 1500 and the two F2H-3's were airborne on an IFR flight plan 11 minutes prior to the expiration time. The sequences and the forecast indicated the pilots could reasonably expect to handle any weather without difficulty, but as is often the case, the sequences did not reflect the existing destination weather picture at takeoff time.

Although the station used for weather planning was only 18 miles from their destination, visibility at the destination was actually 2 miles instead of the 4 miles anticipated by the pilots. Conditions at the alternate had also deteriorated by takeoff time. The 4-mile visibility had held until after the 1328 observation but it had dipped to 2 miles when a special was taken at 1411. It was to go down to 1 mile shortly before the *Banshee's* arrival in the area.



GCA pattern?—he'd practiced them many, many times before, in model. But now he couldn't seem to give himself sufficient time to get settled down.

"Due to a slow northeasterly moving warm front," read a statement of weather conditions at the alternate, "which passed the station between 0700 and 0800, fog or haze persisted throughout the day. Conditions were below GCA minimums (100-1/4) from about 0800 until 1000. The field was VFR from 1040 until 1411 at which time the visibility lowered to 2 miles in haze. It was expected that conditions would deteriorate after dark and heavy fog had persisted over the bay throughout the day. . ."

En route, the leader went on simulated instruments while the wingman acted as chase pilot. Fifteen minutes out, an enroute descent to 20,000 was requested and shortly thereafter, clearance to penetrate and latest weather was also requested. Weather at destination was given as two miles and the leader requested a GCA pickup. Unaccountably, the answer came back that the field was below GCA

Continued next page

WICKENSIMER, R. T., AB3	NAAS Whiting Field	T-28
WYMBS, J. J., AC2	NAS Quonset Point	FJ-4
YORK, A. H., LT	ATU-206	F9F-2
*YORK, A. H., LT	ATU-206	F9F-2

¶ Fourteen previous saves * One previous save reported
§ FIFTEEN PREVIOUS SAVES ** Two previous saves reported

The Big PAYOFF

Box score on major wheels-up landing accidents (pilot-caused)

1 Jan.—23 May 1956 29
1 Jan.— 6 June 1957 12

TRUTH and CONSEQUENCES

continued

minimums. The leader then said they were proceeding to the alternate.

Over the alternate, the leader was cleared for a penetration, notified that GCA was alerted and given the latest weather; partial obscuration with one mile in fog and haze. Shortly after commencing the penetration turn, the wingman reported 1300 pounds of fuel remaining.

The obscuration extended up to about 400 to 500 feet but to the leader, in the clear above, it appeared as a layer of fog. It was now late afternoon of a December day, and the spread between temperature and dewpoint began to shrink with the lowering sun.

As the section was descended to 1500 feet approaching the field the leader said, "My wingman has a fairly low state." GCA asked, "Has he 9 minutes of fuel?" At this the wingman transmitted his own reply, "That is affirmative—just about nine."

In reality, the wingman had about 27 minutes of low altitude endurance remaining, but rightly or wrongly, from that point on, the approach was handled as a fuel emergency involving abbreviated patterns. When asked if a straight-in ASR was desired, the wingman again spoke up and answered "affirmative."

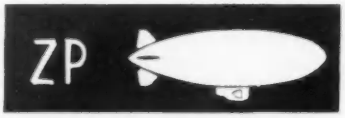
The accelerated tempo, plus the modified patterns given by GCA in an attempt to shorten the time in the air, contributed to a missed straight-in section approach. Both aircraft waved-off and were vectored into position for a GCA.

Shortly after entering the top of the obscuration again, the wingman called that he was going to "step back" and take a normal interval. The double approach continued but only the leader had brief visual contact. From about 50 feet altitude he saw the high-intensity runway lights going by 150 feet to starboard and he waved off. The wingman had waved off earlier and the voice procedure became somewhat confused as he attempted to set himself up for an immediate return to the glide path for another approach. He attempted a visual pattern with GCA pickup close in but was forced to waveoff from this one. He then found himself behind the leader with about a normal interval.

The leader landed on the next pass but the wingman, being far off the glide path, waved off. Visibility had been dropping as these approaches were being made. It was now down to one-half mile with darkness increasing. On the next pass the wingman was close in on final at 4000 feet and GCA desired to descend him in a pattern. However, he stated he could get it down. The fast letdown complicated the approach and the plane went low, then passed through the glide path without the pilot being able to set up a rate of descent.

On several of these passes the pilot had been telling GCA where he thought he was and what he was going to do. Now as he waved off and commenced another close in pattern he asked GCA to give him a normal approach. It was too late. While downwind, the pilot reported zero fuel but was close enough to complete a base leg and turn onto final before the plane went off the GCA scope in the ground return. He ejected through the canopy but was too low.

A paragraph on one of the subsequent AAR endorsements summed it up. "The second error by the pilot was his attempt to fly alternately visually and on instruments on all approaches subsequent to the initial section precision approach. In effect, he was flying his own approach visually until he entered the fog at about 400 feet. Consequently he never gave himself sufficient time to get settled down in the standard GCA pattern he had practiced so many times before, nor did he ever establish a stabilized glide path. As his fuel was used his approaches became more and more abbreviated with consequently less likelihood of completing an approach to a landing. One normal approach following the section waveoff would, in all likelihood, have saved his life."



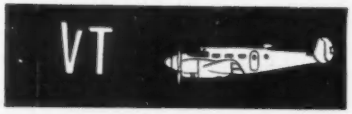
THE WAYWARD BLIMP—During the process of moving a ZPG airship from one mooring circle to another, a quick start by the tractor pulling the mast dislodged the nose cone of the airship from the mast cup.

A visual inspection of the mast revealed that the cup lugs were worn; one lug was frozen in the retracted position, and the other two were not fully extended. The heavy grease lubricating the lugs was stiff due to low temperature. in addition, ice was found in the cup.

It was reported that the ground handling officer quickly wrapped a handling line of the airship around a convenient post, keeping the airship from drifting away. This action on his part prevented damage to the aircraft.

Recommendations (a) all masts be inspected for conditions of lugs, (b) lug slots be cleaned and grease be replaced with light oil and graphite for cold weather use, (c) all masts be thoroughly inspected by the top man for

ease of lug operation and general condition prior to each masting, (d) tractors be warmed up prior to movement of airships so that erratic acceleration will not occur.



NIGHT FLIGHT—During a night surveillance approach to an overseas base the controller advised the pilot of an SNB to discontinue the approach—if he was not contact at field minimums. The ceiling was 500 feet with two and a half miles visibility in rain. Both were decreasing.

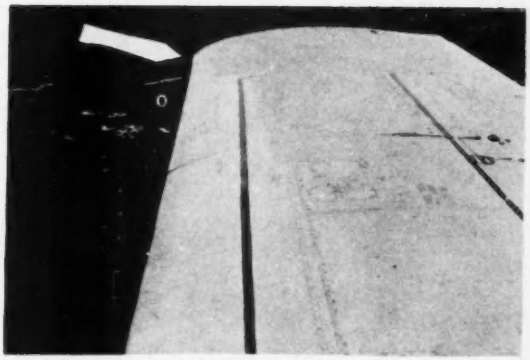
The pilot reported the field in sight, and that he was lining up with the runway. The approach had progressed to the point of flareout for landing when the copilot sighted trees ahead and warned that the aircraft was short of the runway. An emergency pullup was made, but not in time to prevent the port wingtip from striking an approach light located 750 feet from the end of the runway.

In its analysis the accident board pointed out that "although visibility was restricted by rain, the approach lights could be seen by the pilots. It is apparent that these lights . . . were mistaken for the runway landing lights and a landing was attempted between them."

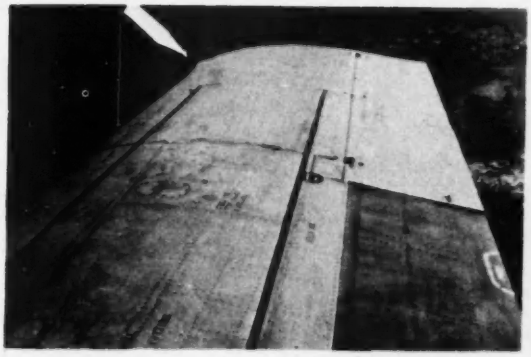
Both pilots state that the green threshold lights were not seen. This could have been caused by the extremely low approach and the low intensity of the green lights in comparison to the intensity of the red and amber (approach) lights. The low number of night hours in the past 3 months (pilot 4.5 hours and copilot 3.1 hours) could have possibly been a contributing factor to this accident.

Following a collision with a bird while airborne the pilots surveyed the damage and this is

WHAT THEY SAW



From the student pilot's view

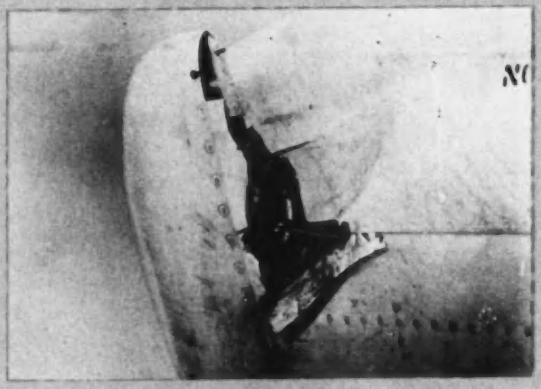


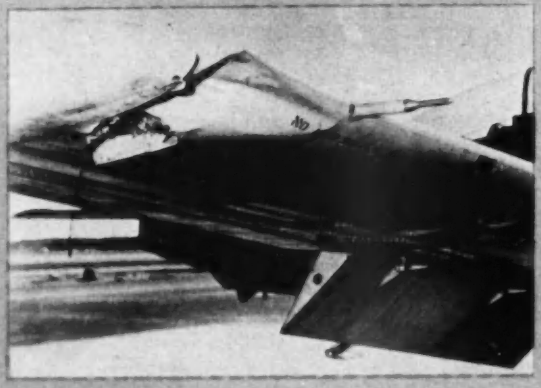
From the instructor's view

for **WHAT THEY DIDN'T KNOW . . .** turn page.

WHAT THEY DID

1. Tested stall characteristics at altitude
2. Continued touch and go landing practice





WHAT THEY SHOULD HAVE DONE

1. Notified the tower and requested a visual check.
2. Tested slow-flight characteristics in the landing configuration.
3. Discontinued the flight and returned to base.

A tip of the pen to NAAS Whiting for developing this material—Ed.

TRUTH and CONSEQUENCES

continued

ILL WIND—Two photo *Banshees* were being recovered and the pilots, noting the whitecaps, became concerned about the wind velocity across the deck. Pri-Fly was called and answered 41 knots. The leader landed, and during the taxi up the deck was given the wing "fold" signal.

As the aircraft began to turn tail outboard for a final spot, the starboard wing exceeded the fold limits and collapsed.

Later as the wingman was traveling up the deck he received a wing "fold" signal and actuated his wingfold mechanism. He said, "I was given a starboard brake signal to taxi me past a parked AJ. At this time I noted my wings had not completed the fold cycle so I stopped and allowed them to fold prior to turning out of the wind."

As he started turning, his plane captain hurried out with the jury struts. "At this time I realized the wind across the deck was stronger than the reported 41 knots," the pilot continued, "so I ignored the frantic come-on's and starboard brake signals being given me and remained stopped until both my jury struts were installed, and then I completed turning the aircraft out of the wind and taxied to my parking spot." Even with this action the wingman's airplane received a cracked port outer wing mechanism support fitting.

The wind-over-deck was actually 45 to a possible 50 knots. This is excessive to fold wings of F2H-2P aircraft.

The ship was charged primary error. ●

A veteran airline pilot takes a fresh look at an old problem—

Mid-airs

by Capt. R. Weigle
Council 50, Airline Pilots Association

DO YOU ever think back about your early days of flying and note the changes in technique that have evolved since then?

If you happened to have been a flight instructor, there is one rule that you will undoubtedly remember drilling thoroughly into every one of your students—always clear yourself before starting maneuvers of any kind.

Before entering a dive or spin, we always made a series of steep "S" turns to make sure there was nothing beneath us. When climbing or descending, we continually made turns to the left and right to check for other traffic—*all this when the density of air traffic was practically nothing compared with today's.*

This basic safety technique has long since been abandoned by the airlines. Now, when we want to climb, we simply start climbing—straight ahead; when we want to descend, we simply start descending — straight ahead. Why? Well, certainly the fewer turns we make the better, so far as passenger comfort is concerned; then too, turning wastes time — slows schedules; and finally, I think we have somehow gotten the mistaken idea that the improved cockpit visibility of modern airliners makes turning unnecessary.

I may be wrong, but it seems to me that the majority of mid-air collisions lately, including the tragic Grand Canyon crash, have involved planes that were flying, not toward each other, but rather in approximately the *same direction* . . . I think it means that, even with the very fast closing speeds of modern planes, we are *seeing* the aircraft approaching us head-on in time to avoid a collision. The ones we are evidently *not seeing* are those planes flying parallel to our own flight path.

It is true we have pretty good visibility from the up-to-date cockpit—*if we were driving our planes on the nation's highways, that is.* Unfortunately, we have another dimension to contend with—the vertical.

This is an inherent weakness in the see-and-be-seen technique of VFR flying . . . pilot cannot see through the roof of the cockpit, nor can he see through the floor. Thus, it is possible for one plane to be directly above another . . . and neither crew can possibly see the other.

It is not a question of lack of vigilance on the part of the pilots: it is strictly a case of inherent blind spots in the aircraft . . .

What can be done to correct this danger? The best solution, in my opinion, would be an electronic proximity warning device covering the area *directly overhead* and *directly underneath the plane* . . .

The next thing needed (and this could serve as a temporary fix until an electronic device can be perfected) is the installation of a pair of *mirrors* on each side of the plane near the cockpit windows, one pointed upward and slightly toward the rear, the other directed downward and slightly forward. They would have to be adjustable from the inside, streamlined, and electrically heated to keep them clear.

In order to check on the necessity of the above suggestions, I think a test should be run as soon as possible.

Lately, we have been putting a great degree of stress on the increasing danger of head-on, or relatively head-on collisions due to the ever-increasing closing speeds of modern airplanes. I certainly do not intend to minimize this danger (for it is definitely a grave one), and everything possible should be done to remedy it . . .

But, in our concentration on closing speeds, let's not overlook the piggy-back condition. It can be a killer . . . Editor's Note: (Overtaking accounted for 20 percent of 452 near-miss CAA reports during the last quarter of 1956 alone.)

Until something like the above suggestions can be installed, I think it might not be a bad idea for us to go back to the old practice of making little "S" turns while climbing and descending VFR . . .

Thanks to Capt. Weigle and the Air Line Pilots Association magazine for permission to reprint some of his provocative piggy-back warning—Ed. ●

surgeon

notes from your flight

SEE STORY

Relatively little information is available on the subject of fatigue and its effect on vision. In a recent address, however, Captain A. M. A. Majendie of Smiths' Aircraft Instruments Ltd., made reference to some experiments at Cambridge. His observations which appeared in *Shell Aviation News* (June 1955) follow:

". . . It was shown that the effect of knowledge or belief about the object being viewed had a diminishing effect upon the mental picture of the object, with increasing fatigue. In other words, the more tired we get, the more nearly do we tend to see objects as they appear on the retinal image, and the less do we *try to build a real and interpretive world out of these images.* This can lead to serious misjudgments about perspective patterns when one is very tired, as angular judgments become quite different from those that one is accustomed to under normal conditions.

"Three important concluaions emerge in relation to the provision of visual aids for bad weather approach and landing.

"Firstly, in the presence of very limited visual information, it is quite possible *for a pilot to build up an entirely mistaken belief about what he is looking at;* and it is equally possible for him to hang on to this belief long past the point at which one would have expected the successive visual clues to have shown him his error. This sort of visual mistake is most likely to occur when only simple geometrical patterns of lights or markings can be seen, without any related familiar visual objects. Errors of this sort will be least likely to occur on those patterns which do not depend on judgments of size, shape or perspective angle, in their interpretation. The Calvert crossbar approach light pattern is a typical example of a configuration having these good qualities, and much of its success is undoubtedly due to them.

CONFUSING CONSPICUITY

Being seen (and obvious about it) is a desirable state day and night, but when wing illumination lights are used to accomplish this, confusion can prevail. A recent near-miss report emphasizes the point:

"We were VFR on course and had them in sight at least five minutes before passing. They had steady navigation lights and also their wing ice lights on. From the angle we approached, we could see the two white lights long before the green wing tip light and were actually unable to tell which way they were going.

"At first we thought it might be two planes in close formation going away from us. Then we decided it was a plane approaching head-on with its landing lights on. When the green navigation light finally became visible and we could see which way the plane was going, we descended to 14,500 and passed below and ahead of it . . ."

Flight Safety Foundation APB-57-8

CONVINCED

"I looked at my altimeter and it read in the neighborhood of 1100 to 1200. I elected *not to eject*, thinking that ditching would be surer and safer—that old feeling that the cockpit is such a safe comfortable place, and besides the line of thought went "this engine may come out of the stall—yet."

"Sitting in a hospital bed with my ankle in a cast, with aches in my arm and cuts on my face, I am thoroughly convinced that if the same thing were to happen to me again on my next flight in the *Demon*, I would certainly zoom up as much as altitude as possible, open the seat belt and eject. Any sort of woody terrain looks like suicide for a *Demon*.

"The cockpit seems like such a homey place. Ejecting seems like an all or nothing solution. The tendency is to wait just a bit longer and think the situation over. By the time those trees get to look awfully big and coming at you mighty fast, it's too late.

"I personally will heartily rejoice when the barometric automatic parachutes join the fleet. And I strongly urge that that day arrive as soon as humanly possible. It will be a wonderful feeling to know that once I pull the face curtain of the ejection seat (while still in that "comfortable" cockpit) that's all I have to worry about until I hit the ground."

BUTTONED UP

Both engines of the SNB quit at 500 feet on an instrument approach. The plane was demolished as it caromed off the trees, although the fuselage remained relatively intact.

There was no fire. All men were clear within 30 seconds. Only the copilot had some difficulty, as his ankle was pinned against the yoke pedestal. He was wearing flight deck shoes which aided in preventing more serious injury. All injuries were very minor, due to proper use of safety equipment.

LOX APRON

A garment for handling liquid oxygen has been evaluated and tested at NAS San Diego.

The garment consists of a plastic apron laced at the back. It has long sleeves ending in a snug-fitting elastic draw cuff. This is supplemented by a plastic hood with a clear plastic window mounted in a lightweight head harness, and plastic gloves which are tucked under the snug-fitting cuffs.

Under testing, the plastic glove was found to be inadequate because of its vulnerability to puncture and freeze-outs.

The hood was found to balloon out under airfield wind conditions. Tiedowns for the hood and replacement of the gloves have been recommended. The garment as modified appears to be quite effective in protecting personnel against accidental spillage or the spray of liquid oxygen.

TO BURN—OR NOT TO BURN

A pilot and student on a night training hop in a T-28-B experienced complete engine failure, landed in trees, and the plane caught fire.

The instructor escaped easily but the student was unable to open his own canopy, and reached back and wiggled out of the back canopy. No one had attempted to put the handle in the emergency open position during this low altitude emergency, thus a tragedy could have occurred.

In escaping the student lost one of his low-cut Wellington-type boots. Because he did not unfasten his mike cord he lost his helmet.

He received burns of both wrists. which are traced to the fact that he wore size 10 gloves, issued to him when his normal size 9's were not available. The 10's fitted very loosely at the wrists. There were burns of the left foot, received when he ran through the fire without his boot. The burns on his forehead, ear, and the back of his neck were made possible by the loss of his helmet.

The rest of his clothing offered adequate protection.

A helicopter pilot was pulled from his overturned and burning cockpit and rolled on the ground to put out the fire on his blazing clothing. He received some burns on his back and upper arm right through his clothing, from the heat.

However, his helmet was intact, but scorched, and his flight suit was essentially unburned except for one cuff.

The exposed back of his neck and face were burned, and a V-shaped area on his upper chest, corresponding to the area left exposed by the collar of the flight suit!

He wore low shoes and nylon socks, and received ankle burns. His gloves had scattered burn holes, but in general it is apparent that the helmet and flight suit with its fire retardant were effective in preventing burns to a wider area and of a greater degree.

Subsonic and Supersonic—there's always one item that needs more airing.

NO MYSTERY!

A RECENT survey studied possible hypoxia-caused accidents—and there are a lot of them!

Excluding takeoff and midair collision accidents, this study considered all Air Force cause-undetermined jet accidents between July '54 and December '55.

It turns out that in 32 percent, hypoxia could have been a possible cause factor, and that hypoxia does not occur mysteriously, but rather for definite, preventable reasons.

Non-fatal hypoxia incident reports for the same period list 55 of the 73 submitted reports as definite hypoxia cases. These were all in the T-33 (TV-2).

These hypoxic incidents give some insight into the reasons why and how hypoxia occurs in jet aircraft. Some factors are improper mask fit and dirty or leaky valves (33%); malfunction of the regulator (22%); separation of the quick-disconnect (23%); and loss of cabin pressurization, miscellaneous 18%; and 4% unknown.

Recommended corrective action for the prevention of hypoxia episodes, and hence possible accidents include:

1. stricter oxygen discipline, with frequent inflight oxygen system checks;
2. emphasis on training jet pilots to check their cabin pressurization and oxygen supply automatically, and as frequently as they do their fuel system;
3. fostering a better pilot-flight surgeon relationship to insure the reporting of hypoxic occurrences, resulting in corrective action;
4. insuring a proper fit with a clean oxygen mask;
5. the utilizing by all major

commands of a reporting system for hypoxic occurrences.

Too Busy to Breathe

Naturally hypoxia rates in aircraft which have two or more crewmembers are below the mean average for all jet aircraft.

Crew oxygen discipline is apparently more effective than that of the solo fighter pilot who is probably too preoccupied with the multiple tasks of flying the aircraft to be fully conscious of the potential dangers of hypoxia.

The introduction of new oxygen equipment will not eliminate all of the hypoxia problems.

The How of Hypoxia

An entirely new concept has been developed of the way hypoxia may affect you.

Under conditions of lack of oxygen your efficiency of performance does not gradually decrease the way a flashlight might burn out as its available energy is depleted, as has previously been believed.

Instead there are periods of poor performance followed by a return to normal performance level, another failure, another normal period, and so on. The periods of impairment become more frequent until final collapse.

This is the conclusion reached by a study made by the Naval School of Aviation Medicine (NM 001 101 104).

There have been numerous experiments on behavior under hypoxia, but most of these have been with simple mental tasks, psychomotor skills, and effect on the senses. Such studies have led to discoveries that, for example, night visual sense is very quickly impaired by hypoxia. Therefore aviators are encouraged to use 100 percent oxygen on night flights from the ground up.

However, there are a very limited number of investigations of the action of hypoxia on reasoning and judgment.

OFF and ON Again Effect

Yet reasoning and judgment are certainly vital to the aviator. The present study undertook to measure the effect of oxygen-shortage on this ability, reaching the conclusion that under severe hypoxic stress, even just prior to collapse, the individual has lucid periods during which his efficiency is approximately equal to that of which he is capable at sea level.

One of these returns to normal may provide the time when the hypoxic pilot is able to take whatever action is necessary to provide himself with oxygen. This possibly explains why some pilots have lived to tell of their hypoxia episodes.

Post Mortem

In the past the campaign against hypoxia has been somewhat hampered because there was no way after a fatal accident to determine that hypoxia had been present before the aircraft crashed, and should be assigned the blame.

Within the past few years the lactic acid test has been developed so that pathologists can now often make this determination.

Flight surgeons have been advised of the proper techniques and procedures.

B-57 crews wearing the AF MC-1 partial pressure suit . . . had three hypoxic (non-accident) episodes. The cause of those incidents was the disconnecting of the oxygen hose (coming from the face plate) at the quick-disconnect position on the manifold block.

Defective and malfunctioning oxygen regulators and other oxygen equipment continue to remain a problem. . . . The defects found in the regulators were primarily leakage of oxygen due to deterioration or rupture of the diaphragm, and/or internal malfunction of the regulator.

Out of Practice

A significant point made in the AF study, applicable to USNR situations also, is that "the high hypoxia rate (for the F-80 aircraft) may be attributed to the fact that (1) the majority of the flights were performed by Air National Guard and active or inactive reserve officers not on extended active duty and (2) a large number of Unsatisfactory Reports on the A-14 regulator were from this model aircraft. In addition, it is possible that loss of pressurization played a significant role as a contributing factor."

Recommendations

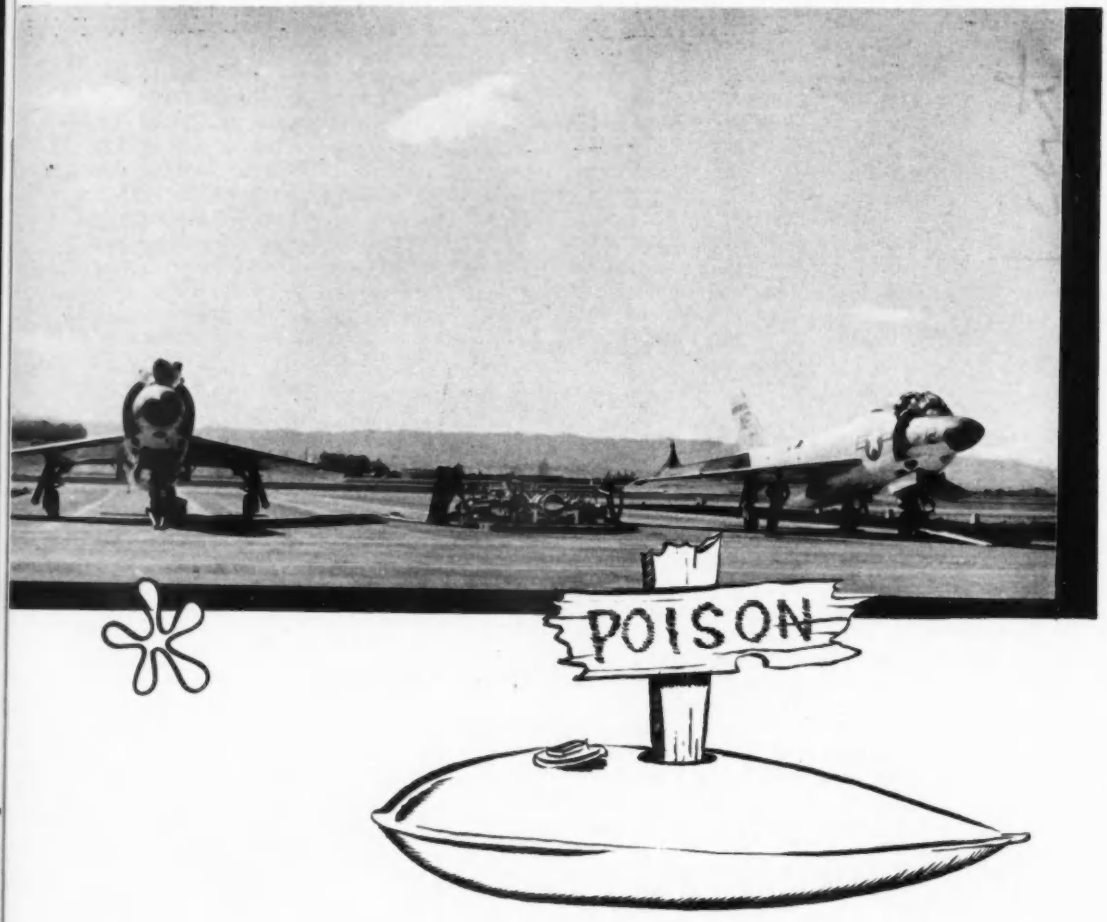
Greater emphasis on checking:

- fit of mask
- cleanliness of mask
- operation of inhalation and exhalation valves
- mask and hoses for cracks or other marks of deterioration
- proper function of regulator
- oxygen supply
- functioning of cabin pressurization
- security of oxygen hose quick disconnect
- Increased emphasis on oxygen discipline
- Frequent in-flight oxygen system checks be re-emphasized.

Whenever possible, the flight surgeon, physiological training officer, personal equipment officer, and flight safety officer should make frequent inspections of oxygen equipment and systems, assist in oxygen mask fittings, and establish rapport with the aircrews so that reporting of hypoxia and other unusual incidents will be made immediately and without reservation.

It was also noted that transition training include instruction in the use and limitations of any new oxygen equipment; and that line personnel be advised to report immediately any malfunction of oxygen equipment installed in aircraft. ●

FUEL CONTAMINATION



THE
DIRTY WORD

THE PROBLEM of aviation fuel contamination has been and is of great concern to the Navy. Advent of the gas turbine and turbo-prop engine has generated a much greater need for cleaner fuel than heretofore required.

A reciprocating engine and its components can cope with considerable amounts of water and sediment, whereas the gas turbine engine along with its associated fuel components is highy susceptible to very small amounts of water and minute particles. The gas turbine engine, in order to provide a finer degree of fuel control, requires close tolerances—thereby increasing its susceptibility to contamination.

In addition to the gas turbine engine's susceptability to contamination, the problem of a quality surveillance of gas turbine fuel is further complicated by several other factors.

For example, a large reciprocating engine will require 90 to 120 gallons of gasoline per hour; a gas turbine uses 500 to 800 gallons of jet fuel per hour. In other words, a gas turbine engine and its components must handle over five times as much contamination per hour as a reciprocating engine, assuming the same level of fuel contamination is present.

Problems arising from water contamination include clogging of fuel micronic filters due to icing as well as corroding of valves and fuel controls.

The problem of fuel contamination in aviation gas turbine engines is mostly due to the physical characteristics of the fuel, i,e., the higher viscosities and higher specific gravity which complicate the problems of settling of water and sediment removal. All fuel contains a certain amount of water. The amount is governed by the composition of the fuel and the environmental conditions.

The settling rate of micronic particles in JP-4 type fuel in a static state, is one-fourth that in aviation gasoline and in JP-5 the settling rate is one-tenth that of AvGas. This means that a five-micron particle will settle 1½ feet per hour in static AvGas, 4 inches in JP-4 and only about 2 inches per hour in JP-5. (During flight conditions, particles are agitated sufficiently to keep them suspended in the fuel and are then drawn into fuel filters and control unit.)

Fuel may be contaminated by the presence of foreign matter, such as dirt, water (rust and salt water in JP-5 forms a sort of emulsion or wet jelly which clings to fuel quantity tank probe units and shorts them out.), or by mixing with other petroleum products such as the mixing of AvGas and jet fuel. The improper mixing of fuels can be the direct cause of aircraft accidents and casualties, and is usually caused by poor or careless operation of the fuel handling equipment and facilities.

Several common sources of contamination are as follows:

(a) Water, either entrained (small suspended droplets of fog or mist) or liquid water slugs.

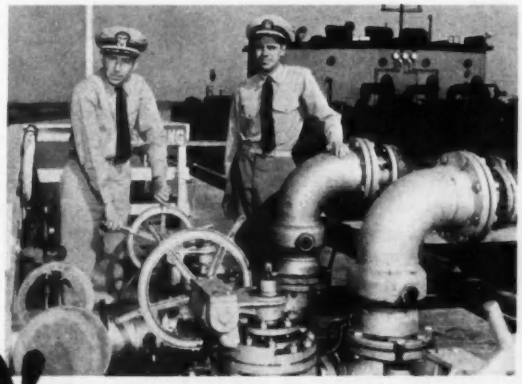
(b) Rust and scale, which usually originate in tanks, pipelines or other steel equipment and fall into or otherwise enter the aircraft fuel.

(c) Sand and/or dirt can accumulate around tank gage hatches, tank covers or other openings and be blown or washed into the tank when the covers are removed.

(d) Lint may come from wiping rags or packing on gaskets. Rubber usually comes from the refueling hose, hose connections or deterioration of self-sealing fuel cells.

When a large quantity of entrained water is present, the fuel will have a hazy or milky appearance. A fuel which is milky or hazy must not be used until checked by proper authorities. (Ref: Tech Order 49-54 "Daily Draining of Aircraft Fuel Systems to Remove Water and Detect Foreign Matter.") Unless water is given sufficient time to settle out and separate, ice could later form in fuel systems which could affect orifices, controls, and filters in a manner similar to dirt. Water slugs are quantities of water which do not mix with the fuel but are carried with the fuel as liquid water. This water can enter tanks or pipelines through fill vents, tank openings, etc. . . . and should be guarded against.

Filter capacities are usually designated by microns, strainers by mesh. Micronic filters are capable of removing extremely fine particles. One micron is the equivalent of 1/25400-inch, so a 10-micron filter would mean one which would remove all particles 10 microns or 1/2540-inch and larger. A filter-separator is used in new refuelers to remove extremely fine particles from fuels. (Details are contained in BuAer Inst. 11240.13A of 16 Nov 1956).

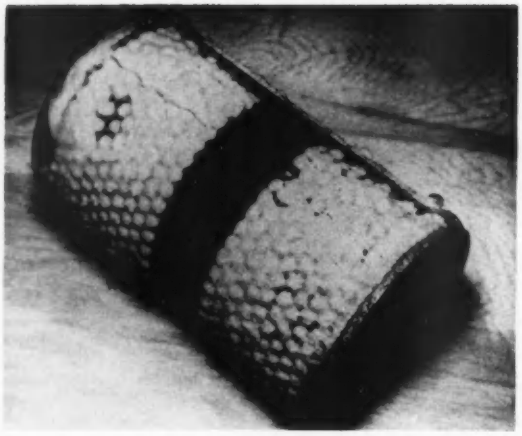


Though the fuel arriving on this barge at NAS Moffett Field is only 8000 pipeline feet from the aircraft fueling pits pictured at left, carelessness or ignorance here or at the aircraft itself cancels all previous extensive manufacturing and storage efforts to avoid contamination, and endangers lives and aircraft.

Continued next page

FUEL CONTAMINATION

Continued



This particular 10 micron filter was operated by Lockheed under conditions of 1900 pph fuel flow with a fuel temperature of —10F (—23°C) to show the effects of icing. After 54 minutes of operation the filter accumulated sufficient ice from water contaminated fuel to increase the pressure drop across the filter element to the point where the bypass valve was actuated. In the case described, only four ounces of water in 1000 gallons.

The contamination of aircraft fuel can be prevented by the use of the proper equipment by competent personnel and by careful and proper operation of the equipment.

a. The methods used to prevent dirt contamination of fuels include prevention of entrance of dirt into fuel by correct fuel filtration. Never leave a tank, refueler truck or other vessel open to air any longer than necessary. Do not operate any fuel handling equipment unless all filters, strainers, screens, are properly installed and in place.

b. During refueling operation, observe separator pressure drop gages and be sure that the separator is functioning properly. (Ref: BuAer Inst. 11240 of 7 Nov 1956).

c. Brush away or remove all accumulated dirt or sand around fill covers, manholes and other covered openings before removing cover.

d. Do not operate any fuel handling equipment unless all filters, strainers, screens, and nozzle spout caps are properly installed and in place.

e. Never remove any filter, strainer, or screen for any purpose, except for cleaning or maintenance. Always replace filter or screen immediately after cleaning.

f. REGULARLY drain and check for water in all tank separators and equipment provided with manual drains.

It should be remembered that the manufacture and transportation of aviation fuels are wasted unless utmost care is given to its final handling. Insufficient knowledge or carelessness in fueling aircraft can result in accidents endangering life and property. Fueling has become a specialized branch of aircraft operation, and those engaged in this work are charged with a serious responsibility.

It is essential that aviation fuels be checked and counter-checked in the storage tanks, in the fuel truck and in the aircraft. Filtration and dehydration equipment must be properly and intelligently maintained since it will not continue to function indefinitely without attention. Any unusual condition of fuel contamination should be traced to its source and corrective measures taken immediately.

Only alertness and continual vigilance will assure clean, dry fuel being delivered into aircraft.

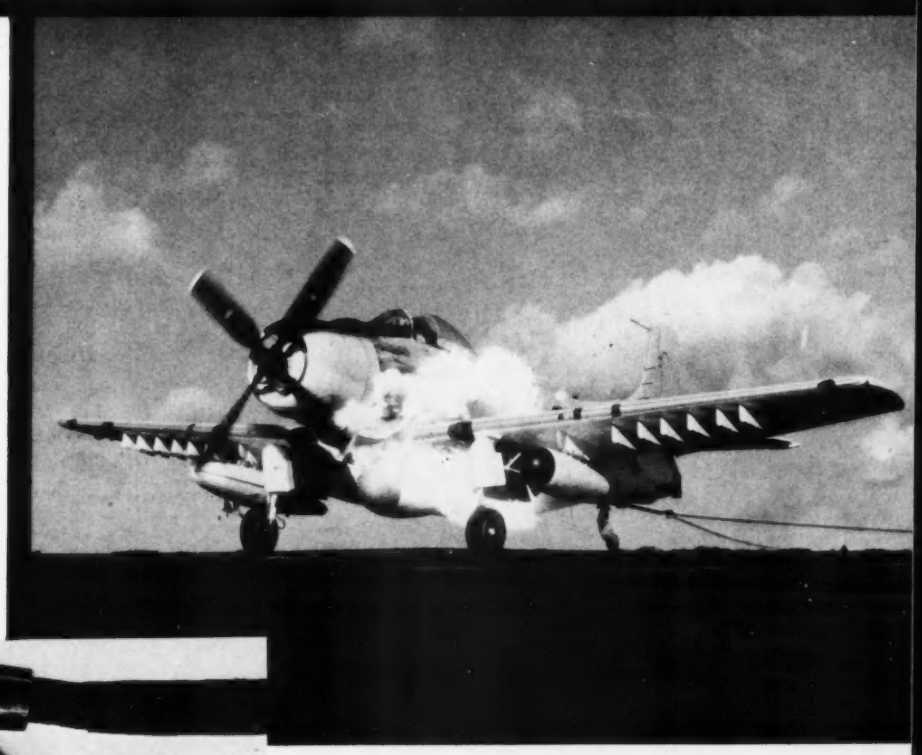
In cases where pits, hydrants or pumping cabinets are used infrequently, it is extremely important to examine the fuel to determine whether water or sediment is present. This should be done by drawing a gallon sample into a glass container and allowing it to stand for several hours out of the direct rays of the sun. If water or dirt are detected, the pumping should continue into a tank truck or container until the lines have been thoroughly purged and all traces of the contaminants have been removed.

On infrequently used installations, the hoses should be drained after fueling. This will minimize hose deterioration and also prevent the absorption of the products of deterioration by the fuel contained within the hose.

Source references: Aviation Fuels and their Effect on Engine Performance—NavAer 06-5-501; Handbook on Aircraft Refueling —NavAer 06-5-502; ComAirPac Inst. 9150.4A of 2 April 1957; Aircraft Refuelers, Filter/separators, operation instructions for—BuAer Inst. 11240.13A of 16 Nov 1956; Aircraft Refillers, Filter/separators, changeover and element replacement—BuAer Note 11240 of 7 Nov 1956; and TO 49-54.

From the Ground Up

Notes and Comments on Maintenance



Broken fuel line elbow on discharge side of fuel pump believed caused by metal fatigue. Though this may have been an isolated case, in view of the AD engine and accessory section fire problem, visual inspection is recommended and check for cracks and leakage in accordance with handbook.

Noting excessive fuel consumption, this AD pilot made a precautionary landing. During the run-out, fuel leaking from a broken fuel line elbow (see photo at left) was thrown against the hot stacks, and this fire ensued. Hot papa action was quick and effective—the pilot received no injuries and the aircraft "Charlie" damage. Large number of in-flight fires in accessory and engine sections of AD series aircraft have been attributed to specific instances of material failure, may be associated with maintenance and operating shortcomings.

For an excellent review of the entire problem, check the AD service Information Summary for April 1957. If you don't have a copy write Douglas Aircraft, El Segundo Division, California.

MURPHY'S LAW★

MURPHY—A J34-WE-34 engine failed in a portable test stand following "C" maintenance. The engine was sent to the manufacturer for inspection. The engine failure was caused by a restricted oil supply to No. 3 bearing.

The reason for the restricted oil supply was improper installation of the gasket between No. 3 bearing oil outlet tube and the No. 3 bearing housing boss. The improper installation of the gasket resulted in loss of oil pressure. Inspection of the oil tube housing joint following bearing housing installation would have revealed the improperly assembled gasket. (See photo)

★ IF AN AIRCRAFT PART CAN BE INSTALLED INCORRECTLY, SOMEONE WILL INSTALL IT THAT WAY.

FROM THE

GROUND UP

Continued

CHOW DOWN—A shop mule sideswiped the starboard side of a parked P2V-3W aircraft resulting in damage to the starboard half of radome. Size of hole approximately 2½ feet long by 12 inches wide. Driver was distracted by the toppling of flight lunches he and companion were carrying on mule.

ILL-FITTING PINS—During initial takeoff run of an S2F, and just as the aircraft became airborne, the radar operator's overhead escape hatch commenced a rapid vibration in its frame and then blew free of the aircraft. The hatch landed on the duty runway. The aircraft made a circuit of the field and landed without further difficulty.

This hatch was taken from another aircraft and installed the night before by an experienced structuresman first class. He experienced much difficulty in attempting to get the push pin rods to seat properly. They could not be forced to their limit position. Extensive efforts to jar the hatch loose failed, so it was considered that the hatch was properly secured. It is now known that it was not completely locked. In preflighting the aircraft, the pilot and observer both reported checking the hatch and found it secure to the best of their knowledge.

Probable cause of jettisoning is believed due to partial unlocking due to ill-fitting push pin rods, especially when hatches are interchanged on various aircraft. Partially unlocked condition was probably aggravated by extensive efforts to determine its security after installation and during preflight.

Corrective Action: Compliance with major inspection list which includes functional testing of escape hatches is recommended.

BOOBOO DAY—An F2H took off with starboard engine intake screen in place. The pilot noticed the screen shortly after takeoff and maintained his airspeed below 250 knots while burning down to landing weight. Ten minutes before landing the screen became disengaged, went over top of wing and wrapped around starboard horizontal stabilizer with one T-handle protruding and lodged in elevator. A normal landing was accomplished.

The starboard chock puller had failed to remove starboard intake screen when he removed the starboard chock. The taxi director and the ramp director did not notice screen as they were not positioned in most advantageous position.

The second endorsement on the report noted: The final responsibility for ensuring that an aircraft is properly configured for flight must rest solely upon the pilot. The fact that line personnel are detailed to remove the duct screens does not relieve the pilot of his responsibility to ascertain that this has been accomplished. The engine intake ducts of the F2H aircraft are easily visible from the cockpit. F2H pilots should be instructed to make an inspection to ensure that the duct screens have been removed prior to flight. This check should be included as part of the pre-takeoff check-off list, and should be made at the same time that the position of the wing safety lock pins is checked.

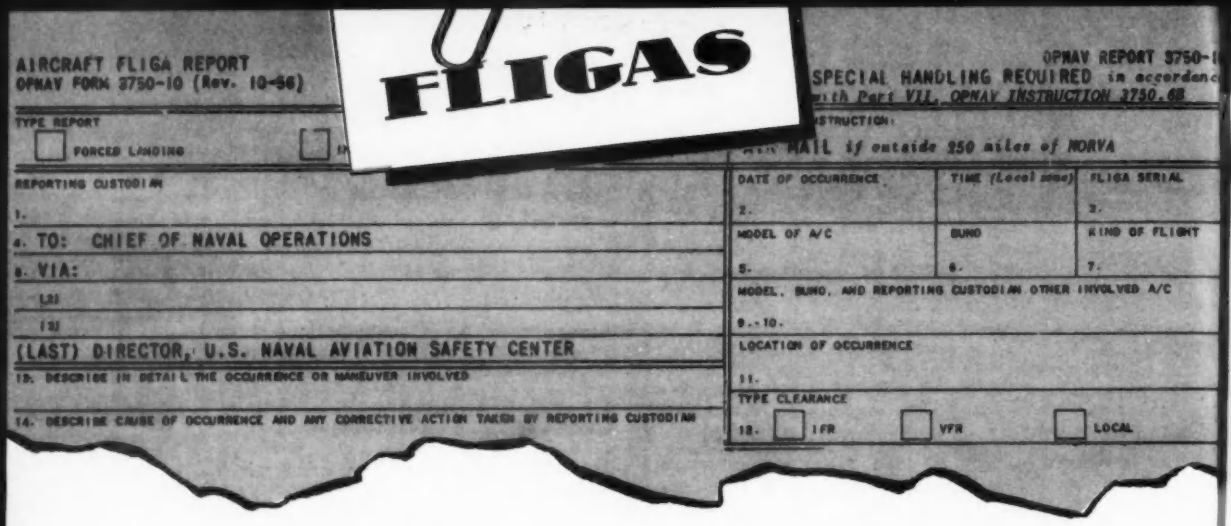
CHECK ENGINE OIL FILLER CAP—An F4D-1 with a J-57-P8A engine suffered an in-flight power failure and forced-landing.

Examination of internal damaged parts of the engine showed that the failure was due to loss of lubrication in the number 4½ and 5 bearings—causing stoppage of the first stage turbine, fuel control and other accessories.

The cause of oil starvation was not determined. However, loss of oil might have been due to siphoning during takeoff and climb if the oil tank filler cap wasn't secured properly.

Caution ground personnel to check the engine oil filler cap for proper security before each flight if the oil tank has been serviced.—*F4D Service Information Summary*

"We appreciate your tidiness, Berg, but . . ."



13. An F2H-3 aircraft struck by bird while conducting low level navigation flight. Aircraft returned to NAS Jacksonville and landed without further incident.

14. Unavoidable. Pilots have been rebriefed on inherent dangers of flushing birds while on low altitude flights.

***FIRST ENDORSEMENT:** The flight on which this incident occurred was being conducted, as briefed, to avoid annoyance to small airfield operators, chicken farmers, and mothers of sleeping babies. This forced the flight to invade the natural habitat of sea gulls, ducks and buzzards. While some of these creatures have a constitutional right to proceed unmolested through certain designated North-South freeways, it is believed that subject bird was "jayflying" and was therefore fair game. Accordingly, no disciplinary action is contemplated.*

It would appear that any corrective measures to prevent recurrence must be effected at a much higher level of command than the squadron or air group level.

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13. The pilot of a FJ-3D experienced utility hydraulic failure in flight. He successfully lowered the aircraft landing gear through proper use of the emergency gear extension system. He then elected to land, so as to engage the rigged arresting gear. The hook was lowered in the air and checked down by wingman. A successful landing was made, however, both pilots had forgotten that two sets of arresting gear are installed between these runways, 1000 feet from each end. Consequently the gear for use in conjunction with the runway was engaged in the wrong direction. The end of the arresting cable on the port side of the aircraft pulled through the cable clamps upon tensioning and caused damage by striking the underside of the fuselage.

14. Hydraulic reservoir cap loose. Pressure in tank caused fluid to escape overboard to the extent that the utility hydraulic system was no longer effective. Line Personnel and pilots have been rebriefed to check the security of reservoir caps prior to each flight.

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13. During takeoff roll the port tire blew out. Pilot aborted takeoff and was unable to stop aircraft before going off end of runway. Aircraft came to rest 15 feet off end of runway overrun.

14. Unknown. Tire appeared normal on preflight. All pilots have been instructed to lower tailhook to engage arresting gear whenever there is any doubt of stopping on runway.

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13. Pilot of an F9F-6 was in a slight turn over the end of the runway just prior to touchdown at an altitude of a few feet, when the left wing dropped causing the aircraft to land hard on the left main gear and the left wingtip made contact with the runway.

14. Pilot encountered prop wash from transport which had taken off just prior to his turning into final, causing left wing to drop and contact runway. Re-emphasized to all pilots the danger of encountering prop or jet wash when landing too close behind taking off aircraft especially during calm wind conditions.

---

13. Pilot of an F9F-8P made a normal approach to a landing on a 7000-foot runway. Soon after touchdown he made a voice transmission stating that he had no brakes.

He lowered his speed brakes in an attempt to slow the aircraft down. At 3500 feet down the runway, with an indicated airspeed of approximately 80 knots, the pilot actuated his emergency brake air bottle which resulted in a blown left main tire.

The aircraft skidded down the runway slightly to the left of the center line contacting an Air Force-type barrier approximately 30 feet from the end of the runway. The nose of the aircraft struck the nylon webbing which released the cable of the barrier. This cable was then in position to catch the main wheel struts; however, the extended speedbrakes diverted the barrier cable downward allowing the main wheels to pass over the barrier. The aircraft came to rest 150 feet past the end of the runway.

14. The pilot erred in actuating the emergency brakes at too great a speed for the braking action to be most effective.

It is recommended that pilots of aircraft equipped with speedbrakes similar to the type installed on F9F aircraft leave the speedbrakes retracted if they wish to utilize the Air Force-type barrier.

It is also recommended that with this type barrier the pilot lower the tailhook.

13. One screw, Part No. AN509-10R15, used to secure the aft in-flight F2H-4 refueling probe fairing, R82- MDA Part No. 23-30;36-3, parted and was ingested by the engine during in-flight refueling.

14. A maintenance order has been issued that all plane captains check each such screw and assure that it is tight before and after each flight. Pilots have been instructed to thoroughly inspect these screws in the in-flight refueling fairing before and after each flight. Drilled-head 10/32 bolts are on procurement to replace the presently used screws and will be safety wired in one series to preclude loosening of any bolts from the fairing and be ingested by the engine.

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13. Student pilot was in F9F-5 aircraft. After having turned up, plane captain came up on side of cockpit to adjust parachute harness and check oxygen flow. Leaning into cockpit plane captain inadvertently actuated canopy control to closed position and was subsequently trapped by closing canopy. Plane captain's body covered canopy control and student had extreme difficulty reaching canopy lever. After plane captain passed out pilot opened canopy and plane captain was lowered to ground by an instructor who rushed up when he saw what was happening. He sustained minor injury.

14. Plane captains and maintenance personnel will no longer allow any part of their body to extend into cockpit while engine is running unless canopy ground lock (heavy steel bar that fits in place on canopy rail) is in place. Squadron instructions have been modified so as to preclude future accidents of this nature.

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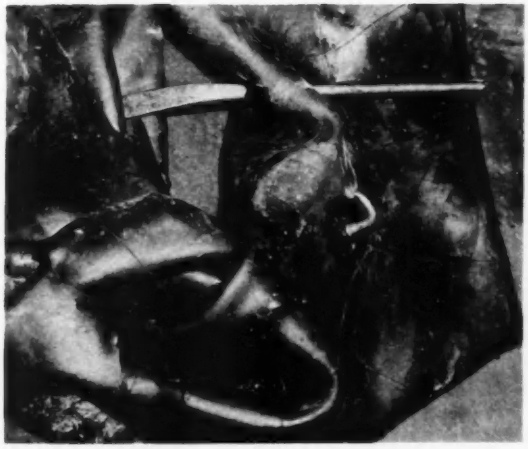
13. JD-1—During the fourth landing of the day, the two immediately previous being touch-and-go's, the port main tire blew out upon touchdown (it is possible the tire went flat in the air). Corrective action (power on port engine and starboard brake) was



taken to maintain directional control until the aircraft passed the GCA shack, at which the airplane veered off the runway to the left stopping about 50 yards from the edge.

14. Maintenance error: *Tire iron left in port main tire casing* caused tire to fail on landing.

13. Complete hydraulic failure while climbing F9F-2 through 18,000' wings level on climb schedule for a section tactics prebriefed flight.

14. Pressure line assembly Part No. 134000 887AH-4 at station 299 parted approximately 2½ inches aft of connection at station 299. Fuse did not stop flow, reason is now being investigated.

The broken line showed some evidence of being twisted and scarred at the forward end from routine tail removal and installation for maintenance. All of these lines in aircraft of this Unit will be carefully inspected at next tail removal and any damaged ones replaced.

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13. The ejection seat of an FJ-3 was being removed from the plane for a routine maintenance. The auto seat belt actuating cable, lodged on the same object in the cockpit causing the automatic seat belt to fire. The ordnance man received burns about the face from the blast.

14. It is recommended that, after disconnecting terminal AN-667-3 from angle in cockpit, fork RA-2500-3 be safety-wired to actuator prior to removal of seat from aircraft.

SECOND ENDORSEMENT: The recommendation of the report is sound, however, more care on the part of the maintenance personnel would have prevented this incident. The method for actuation of automatic lap belt release is being redesigned to eliminate the cable for actuation.

---

13. In the process of towing an AD from the line to the hangar the tail was swung into a guard chain at the edge of the road. The aircraft was being towed with one man on the tractor and one man in the cockpit. No other personnel assisted with the movement. It was necessary to make a sharp 90-degree turn in a confined area to enter the hangar.

14. This accident was caused by carelessness on the part of personnel moving the aircraft. A contributing factor was the confined area in which it was necessary to maneuver the aircraft. The importance of having additional personnel at the wings when towing in a confined area is being emphasized to all tractor drivers. To allow more space for towing aircraft into the hangar the guard chain will be moved.

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13. An aircraft's jet blast blew an unsecured tail dolly 100 feet into the starboard wingtip of another FJ-3 parked in front of ordnance shop where an ordnance crew was boresighting the guns.

14. Damage was caused by line personnel failing to secure the tail dolly and by jet blast.

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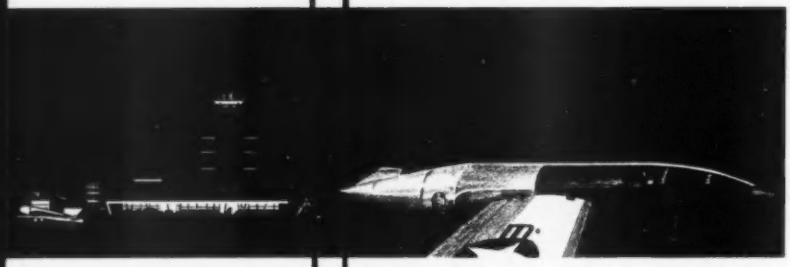
13. An AD-6 was down for a 2nd intermediate inspection and a 60-hour oil change. Oil was drained at the beginning of the inspection and the aircraft was not reoiled upon completion. On post inspection turn-up the engine seized after approximately 1½ minutes of operation.

14. The seizure was caused by lack of lubricating oil, with resultant overheating of the engine. The incident occurred because the check crew failed to observe squadron instructions which require posting of a warning placard in the cockpit whenever the oil is drained. ●

TIP TANK



Miscellaneous aviation safety information

BOOBY TRAPS

There are many kinds of booby traps, each with its own brand of come-on. But there's one special type that has a particular allure for pilots. The Air Force calls these traps "Sucker Holes" and reports on one this way:

"One is the hole that appears during the GCA final to a field with a low, ragged ceiling. At about 600 feet you suddenly break out and see the ground over the nose of your plane. The runway is still obscured by clouds, but you can see the ground lights and so you decide all you have to do is duck under the cloud up ahead and go in, contact.

"Down goes the nose in a push-over, then a small turn to avoid that one low-hanging precip cloud and . . . wham! You're in the stuff again. What you didn't count on is the fact that the cloud you ducked under hides other clouds that go right on down to the deck! You're back in the soup before you have time to readjust to instruments. Involuntarily, you haul back on the stick to put a little more room between you and the field because you haven't even had time to remember the field elevation and correlate your altimeter reading with it. There you are . . . nose high, airspeed and altimeter low, and GCA yelling at you to go around unless you have the runway in sight . . ."

You're in a bind and one that has booby-trapped a lot of pilots. You read about the unlucky ones. Moral of this predicament is,

"Don't be sucked in by a hole in a low, ragged ceiling. Stay on GCA until you have to concentrate your full attention on the actual runway touchdown. And when you do break out somewhere along final, use your visual reference to the ground as though it were another gauge in the cockpit, and one to be cross-checked in its relationship to the other gauges. This procedure is a good defense against vertigo, too, and it's easy to get vertigo in a situation like this."—

Courtesy ARDC and AFFTC as noted in FLIGHT SAFETY FOUNDATION APB 57-6

REPORTED NEAR-MISSES

Of 452 near-miss reports submitted to CAA from September to December 1956, military pilots accounted for 59 percent or 259 reports, according to a recent CAA safety report.

Scheduled air carriers submitted 83 with the remainder coming from general (corporation, private . . .) aviation.

A whopping 89 percent happened in controlled airspace, which includes en route incidents and arrival/departure incidents. The en route altitudes between 4000 and 15,000 feet had nearly twice as many near-misses as all other altitudes combined and 4 out of every 5 occurred in VFR weather.

Seventy two percent happened during daylight with about 50 percent taking place in level flight. Crossing and head-on closing courses were about evenly divided in number but accounted for 78 percent of all reports. Overtakes accounted for 20 percent.

In 340 incidents (75 percent) the reporting pilots did not observe the other aircraft prior to the time a "near collision" was believed to be imminent. In 51 incidents it was stated that evasive action was impossible.

Forms for reporting near-misses are available at your air station operations office.

MEMO TO VR AND VP TYPES:

During a five-year period the CAA recorded 28 overshoot accidents in U. S. scheduled and irregular air carrier operations. In 23 of those accidents, the runway was wet, snow or ice-covered. (For info on braking on these surfaces, check last month's *Approach*, "The Long and Short of It," page 26.)—*"Overshoot Accidents in U. S. Scheduled and Irregular Air Carrier Operations, Transport Type Aircraft, 1950-1955" by Civil Aeronautics Board, Bureau of Safety, dtd 8 March 1957.*

approach ANNUAL INDEX

VOL. 2 JULY 1956 — JUNE 1957

NOTE: Limited numbers of extra copies of some back issues of Approach *and of this INDEX are available on request to NASC.*

WELL DONE

Mr. Ted Mack of ABC-TV, Senorita Hilda Rivera, Guatemalan Coffee Queen, and AC3 C. E. Overton, who provided Spanish-language GCA instructions that saved a Guatemalan Air Force C-47 in which the Senorita was a passenger.

The lives of 25 Guatemalan citizens were saved by the fast-thinking and bilingual ability of Clifford E. Overton, AC3 of NAS New York GCA unit, who talked a Guatemalan Air Force pilot to a safe landing at Floyd Bennett Field.

The Spanish-speaking pilot had missed GCA approaches at Idlewild International Airport and at Mitchel AFB due to his limited English-speaking ability.

Overton, preparing to go off duty, heard the pilot report he had only 20 minutes of fuel remaining and urgently request landing instructions from any station. Overton, speaking precise Spanish, guided the plane through the snowstorm to the Navy field where the visibility was a mere 200 feet.

The plane carried a Marimba band, two women singers and Guatemala's Coffee Queen, scheduled to appear on a television program honoring Guatemala.

WELL DONE to Air Controlman Clifford E. OVERTON.

BIEN ECHO—La vida de 25 Guatemaleños fue salvada por la pronta y lenguiesta abilidad de Clifford E. Overton, AC3, de NAS, Nueva York GCA, quien dirijió a el Piloto Guatemaleño a un suave aterrisamiento en la Base Floyd Bennett.

El piloto Guatemaleño no pudo tomar instructiónes para aterrisar en el Puerto Aero Internacional de Idlewild ni la Base Areria Mitchel, por la falta de no hablar Ingles sufficientemente.

Overton, cuando el se retirava de la officina, olló el piloto que reportava que solamente tenia gas para volar 20 minutos mas y que pedia a qüal quiera stación que le dieran instruci ónes para aterrisar. Overton, quien habla Español bastante bien, gio el avion a un suave aterrisamiento, sovre una tempestad de nieve que no se podia ver mas de 200 pies.

El avion cargava una Banda Marinba, dos mujeres cantadoras, y la Reina de el café Guatemaleño quienes ivan a tomar parte en un program a de televisión para honorar a Guatemala.

BIEN ECHO a Clifford E. OVERTON, director de el tráncito aerio.